WEST DEALER ISSUE
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ncrease in Freight Would Be Hardship n Industry, Farmer

Protest Made by NPFI Against Raising Rate To Ship Fertilizers

WASHINGTON, D.C.—Granting of proposed 7% freight rate increase the Interstate Commerce Commission "would impose an insurmountble hardship on farmers and the fer-izer industry," Paul T. Truitt, ex-utive vice president of the National ant Food Institute, Washington, C., said in commenting on the re-est by rail carriers for this in-ease.

The NPFI has filed with ICC a pro-st and request for suspension of creased freight rates on fertilizer d fertilizer materials.

"Freight rates now constitute a isproportionately high share of the otal cost of fertilizer and this at a ime when farm income is near dis-strously low levels," he said. "Any ncrease in the cost of agricultural roduction would only add further o the serious farm problem that aces the nation."

Mr. Truitt said that "the assump-n by the railroads that any in-eased freight charges could be ab-rbed by the industry or by the rmer is not true in the case of tilizers," emphasizing that "plant d costs have been held to the

(Continued on page 17)

Inside You'll Find

ld Notes 9
hat's New 10
orld Report 14
ear and Pat 14
rm Service Data 15
er the Counter 16
hat's Been Happening 16
litorials 22
eeting Memos 23
dex of Advertisers 23

American Potash, Meyer to Sever Sales Agreement

LOS ANGELES — Peter Colefax, president of American Potash and Chemical Corp., and Wilson Meyer, president of Wilson & George Meyer & Co., have announced that by mutual agreement, the long-standing arrangement under which the Meyer firm has represented American Potash & Chemical Corp. in the sale of "Trona" agricultural potash, borax, soda ash and salt cake in various western sales areas will not be renewed upon its expiration in mid-1956.

The expansion of American Potash & Chemical Corp. in its field of manufacturing and the added responsibilities of the Meyer Co. in its field of distribution have resulted, in recent years, in the development of divergent interests. Both parties therefore arrived at the mutually agreeable decision to sever their old relationship.

In commenting on the decision, Mr. Colefax stated the change was being made with full appreciation of the many valued services performed by the Meyer organization for the past 20 years. Mr. Meyer, in turn, complimented Mr. Colefax on his leadership and extended him best wishes for the success and continued growth and expansion of American Potash & Chemical Corp.

ICC Asked to Suspend Rail Rate Hike Request

WASHINGTON — Ezra Taft Benson, secretary of agriculture, has petitioned the Interstate Commerce Commission to suspend an application of the railroads for a 7% increase in freight rates with respect to raw and processed farm products, farm supplies and fish.

In his petition to the commission, the secretary emphasized that favorable action on the railroad request would, to the extent of the increase, nullify concerted efforts now being made to relieve the farm producers' difficult economic condition.

Farm Measure Laden With Uncertainties for Chemical Industry

By JOHN CIPPERLY
Croplife Washington Correspondent

WASHINGTON—Despite the fact that the Senate Agriculture committee has exhibited unexpected speed in developing its version of a farm bill, the present situation is laden with uncertainty for the producers of plant foods and pesticidal chemicals.

Primarily the situation is this—the House at its last session passed a farm bill which would repeal the flexible price support provisions of the existing law and reinstate a 90% of parity support for wheat, cotton, rice, peanuts, corn and tobacco. At that time the soil bank had not attained its popularity rating as top best seller in the political world and consequently was not included in the House-passed measure.

This past week the Senate gave tentative approval for the maintenance—and immediate restoration for the 1956 crops—of the full 90% of parity support for those same crops for a period of two years. This provision is expected to remain in the bill the Senate Agriculture Committee finally reports. The Senate bill should be slated for consideration on the Senate floor starting Feb. 16. As to the restoration of the rigid high price support program, both the House and Senate measures are in virtual agreement, which means that if the Senate should approve the restoration of rigid high supports they would be enacted short of a presidential veto.

However, the Senate approval of the 90% support level is by no means certain. Blocking the certainty of approval is the strong bipartisan team of George D. Aiken of Vermont, Republican minority farm leader, and his equally strong Democratic colleague Sen. Clinton P. Anderson, of New Mexico. Both of these gentlemen are forceful, influential voices in the Senate who are counted upon to make a vigorous fight against the adoption of the flexible price support schedule postponement or repeal.

In 1954 a somewhat similar situation existed when the Senate Agriculture Committee voted by an 8 to 7 majority to repeal the flexible law provisions. The same numerical split now exists, except that it is learned that the minority vote contains three Democratic members of the committee with a defection of three Republicans from the Aiken leadership of the minority. The Republican defection reflects votes from the grain states, one of whose members faces a stiff reelection fight this fall. On the Democratic defection from the leadership of Sen. Ellender of Louisiana, committee chairman, in addition to Sen. Anderson, there is said to be the swing away from rigid high level supports of the cotton industry as evidenced in the reported backing of Sen. James O. Eastland of Mississippi of lowered levels of support for cotton. This may mean that the solid cotton bloc which was the spear-head of past high price support efforts has been dulled or broken.

Under such circumstances it is seen possible that the high price support provision of the Senate bill may be beaten on the Senate floor, thereby throwing the two chambers into a major area of disagreement when the farm legislation goes to a conference committee for adjustment.

There is the possibility that an impasse might lead to no new farm legislation this year except for the soil bank.

The Senate bill has earmarked $575 million as the total amount of money available to redeem certificates which would be issued for retirement of land beyond that removed by acreage allotments for wheat, cotton, corn and rice. Precisely where those federal payments will be made is not

(Continued on page 20)

Chipman Chemical To Construct DDT Plant in Portland

PORTLAND, ORE.—Chipman Chemical Co., Bound Brook, N.J., has announced that construction of a 2,4-D plant adjoining the company's district office and factory at Portland will begin immediately.

The new 2,4-D plant, which Chipman says will be the first of its kind in the Pacific Northwest, will produce a complete line of 2,4-D and 2,4,5-T weed killers for consumer use, as well as 2,4-D acid and technical ester forms of 2,4-D and 2,4,5-T, including the low volatile esters.

"This new plant will answer a long felt and growing need for complete 2,4-D manufacturing facilities in the Northwest," a company spokesman said. He added that the plant will also play an important part in supplying the Midwest states.

The 2,4-D acid and technical esters manufactured at Portland will be shipped to one of the company's three Midwest plants; then formulated into the various finished products, the company reported.

owa Dealers Hear Talks on The Farm Cost-Price Squeeze, Growing Soil Insecticide Use

AMES, IOWA — The double-barled "squeeze" that has many Midst farmers in its grip received spel attention at the annual Fer-izer Dealer's Short Course at Iowa ate College Jan. 31.

Some 500 fertilizer dealers heard pecialists discuss the cost-price queeze and the need for subsoil oisture for Iowa crops, looking head to the 1956 growing season.

Also packed into the full program the one-day session were discus-ns concerning the value of soil tests to determine fertilizer needs, the application of soil insecticides with and without fertilizer, fertilizer balance, water solubility of phosphorus and irrigation.

E. R. Duncan, Iowa State College agronomist, predicted that the soil-moisture squeeze will place the odds against high corn yield in 1956. For that reason this appears to be a good year to use a moderate level of fertilizer, in his opinion.

"If there's only enough moisture for a 60-bu. per acre yield, for ex-

(Continued on page 5)

Importance of Fertilizer as Tool for Cutting Output Costs Stressed at Wisconsin Meeting

MADISON—More than 200 lime and fertilizer dealers reviewed the status of their industry and got a glimpse into the future at the sectional meeting of Wisconsin Farm and Home Week Jan. 30, at Madison. The speakers agreed that fertilizer and lime will continue to increase in importance with respect to low-cost production on the farm.

Speakers at the meeting included C. J. Chapman, J. R. Love, and L. E. Engelbert, soils specialists at the University of Wisconsin, R. L. Cook, chairman of the soils science department at Michigan State University, and W. H. Garman, chief, agronomic relations, National Plant Food Institute, Washington, D.C.

Mr. Chapman, program chairman, told the group that the high living and production costs hovering over farmers today make it necessary to get every crop acre to produce to the limit of its capacity. He said that lime and fertilizers are helping farmers cut per unit cost of production.

He pointed out that the use of fertilizer and lime is important in controlling erosion. He said many fields are so low in fertility and sour that in their present condition they can not grow a respectable protective cover.

J. R. Love said that lime is the basis of efficiency for farm production. He said that it does more than just sweeten the soil; it helps liberate other vital elements the plants need and helps the soil bacteria break down the organic matter.

"How much lime should you tell a farmer to put on his fields?" Mr. Love asked the group. He said that recommendations should be based on a soil test, and that a recommendation is no better than the soil sample that was sent in to be analyzed.

L. E. Engelbert, speaking on fertilizer recommendations based on soil tests, challenged the group to get farmers to adopt the slogan "Test, Don't Guess." He said that he believes that if dealers would push soil testing, fertilizer and lime sales would increase because the recommendations would be coming from a disinterested party as far as commercial sales are concerned.

Mr. Engelbert pointed out the need for good soil sampling. He said one composite sample should be taken from each five acres at least every four years.

"Once the recommendation has been received, the farmer must apply the plant nutrients right if best results are to be obtained," Mr. Engelbert said. This is another place where dealers can be helpful. He said they can have the latest information on application methods, machines and better ways of doing the job under varying conditions.

Mr. Engelbert cited an example from last summer. He said that many farmers experienced the mistake of placing too much fertilizer in the hill on checked corn. "The results were uneven germination and in some cases poor stands," the soil scientist said. According to Mr. Engelbert, the danger could have been avoided by drilling the fertilizer in the row, or by examining the corn hills carefully during planting to make sure the fertilizer was not being placed in contact with the seed. The specialist said that there is no danger from "improper application of lime, but poor seeding catches are often the result when lime applied to strongly acid soils is not worked in before plowing." The lime isn't mixed into the soil, it is just in a band at the bottom of the furrow, Mr. Engelbert said.

R. L. Cook said that interest in health of man and animals has caused attention to be centered on the composition of foods and feeds. He reported that plant composition may or may not be changed by fertilizers, and changes may not always result in improvement in feeding value of crops, especially forages.

Mr. Cook cited results from a 10-year nutrition study involving two herds of dairy cows, one fed from crops grown on untreated soils, and the other fed on crops grown on similar soil which was limed and fertilized. The crops varied greatly in yield but not in chemical composition, Mr. Cook said. The herds were similar in production and milk composition was not affected.

Other experiments, Mr. Cook said, show that a treatment which results in nutrition unbalance will cause changes in plant composition. He said that excessive applications of phosphorus in greenhouse studies always increased phosphorus levels in plant tissue and resulted in increases in the protein content of soybean, but decreased in per cent of protein in oats. And he said that the feeding value may be improved or depreciated depending upon the animal and the nature of the other feeds in the ration.

Discussing fertilizer placement as related to solubility and mechanical condition of the fertilizer, Mr. Cook said that "fertilizers containing very little of the phosphorus in water soluble form should be mixed with the soil and probably should not be granulated. Certainly they should not be in large granules and be also placed in concentrated bands."

The Michigan State soil scientist said that tillage affects fertilizer efficiency. He said plowed-under fertilizers cannot be used efficiently by corn unless the furrow is kept loose enough to allow roots to penetrate to the fertilizer. Fertilizer placement tools do not function properly in excessively packed soils, Mr. Cook said. This is because packed soil does not "flow in properly over fertilizer bands."

W. H. Garman said that figures released recently by the U.S. Department of Agriculture show that in 1954 farmers spent 51% more for fertilizers and lime than they averaged during the 1947-49 period. Their expenditures for all other production goods and services increased by only 16%.

"There is no question in my mind but that fertilization along with disease, insect and weed control will be the principal tools or production items which our farmers can use to maintain the level of income they now enjoy, while at the same time they are farming fewer acres of land," Mr. Garman stated.

He said that urea has been potentially important as a source of nitrogen for a good many years, but it is only within the last couple of years that quantity-wise, it has shown promise of becoming an important factor in the agriculture picture. "According to current estimates, we can expect about 75 thousand tons of nitrogen in this form to be available for agriculture during the current fiscal year," he declared.

"A new source of nitrogen to hit the market in the last year or so is a combination of urea and formaldehyde," Mr. Garman said. He felt that this source is too expensive for use on the farm, but it offers considerable possibilities for use on lawns, parkways, football fields, golf courses, and other turf areas. "One nice thing about it," Mr. Garman said, "is that a large quantity can be applied at one time without danger of injuring the growing vegetation and that the nitrogen will be released gradually throughout the season."

Another recent development in the fertilizer industry, Mr. Garman told the group, is that the production of diammonium phosphate is increasing. He said this material is completely water soluble, and thus may find a growing demand for liquid fertilizer production. Mr. Garman said that liquid fertilizers accounted for 2.6% of all the nutrients marketed in the U.S. for the 1953-54 fertilizer year. He pointed out that growth has been most rapid in the Far West and Southwest, but now is gaining considerable ground in the Midwest.

Mr. Garman said that the single major problem in formulating liquid mixtures is related to the prevention of salt crystallization, or "salting out." "This becomes more of a problem as the amount of phosphorus and potassium in the mixture is increased," Mr. Garman said.

In spite of problems faced by the manufacturer, and by the farmer in making doubly certain that he is using the exact amount per acre, many people predict that the use of fertilizer-pesticide mixtures will continue to increase, Mr. Garman stated. In 1952-53, almost 90 thousand tons of these mixtures were sold. In 1953-54, sales jumped to 150 thousand tons, and in 1954-55, sales hit an estimated 200 thousand tons.

Mr. Garman said that currently farm equipment manufacturers are designing hoppers for applying pesticides at the same time, but separately from the fertilizer. Such hoppers will be available for regular planters, side-dressers, and fertilizer distributors.

"Seasonal demand for fertilizer is still the industry's major problem," Mr. Garman said. "The rapid advances in farm mechanization over the past two decades have made this problem even more serious." The fertilizer season in the early spring used to be longer than it is now because our modern-day equipment will do the job in less time.

Mr. Garman said this forces the industry to install ever-expanding storage facilities. "Actually it costs a farmer very little to store fertilizer on the farm, whereas when industry has to store it, the cost has to be passed on to the farmer," he concluded.

CORN PACEMAKERS

MADISON — Wisconsin's "Corn Pacemaker" farmers harvested an average of 93 bu. of corn per acre in 1955. The average 1955 Pacemaker yield was below the two preceding years—114.3 in 1954 and 102 in 1953—due to hot humid weather during the July pollination period and a severe drouth with hot, dry winds later in the summer. A total of 454 farmers and 4-H members in 41 counties took part in 1955 Pacemaker work. Certificates were handed out to Corn Pacemakers at a session of Farm and Home Week. Pacemaker farmers are required to have the soil tested for each field and apply fertilizer according to recommendations by the county agent or by the state soils testing laboratory in Madison.

CORNELIUS L. SHEAR DIES

MONROE, LA.—Dr. Cornelius Lott Shear, noted plant pathologist, died recently here at the age of 90. Dr. Shear joined the U.S. Department of Agriculture in 1898. At the close of his career in 1935 he was in charge of the Division of Mycology and Disease Survey, Bureau of Plant Industry.

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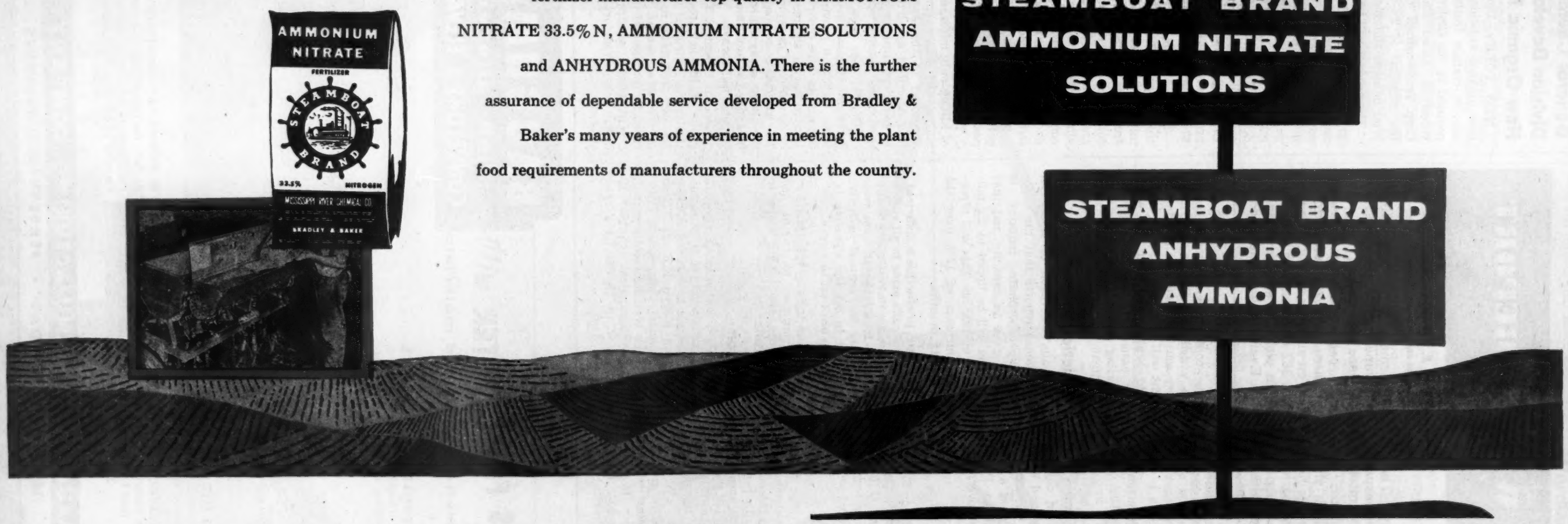

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WORLD REPORT

By GEORGE E. SWARBRECK
Croplife Canadian and Overseas Editor

"It pays to spray." That was the theme of a message delivered to a conference of land inspectors in Winnipeg by Dr. George Friesen of the University of Manitoba's plant science department.

Dr. Friesen reported on a survey carried out by university scientists in 1955 which showed that there were 285 weeds to the square yard in an average field of wheat on summer fallow. The weed average in second crop barley fields was 382 to the square yard. Such weed densities cause sharp reductions in yield, he said, and make it economical to spray with herbicide. Every dollar expended on herbicides paid big dividends.

Dr. Friesen said that flax should be sprayed at two- or three-inch stages and wheat at the three- or four-leaf stage.

Chinese Order

The Communist government of China has bought a quantity of fertilizers from Austria at a cost equivalent to $7 million. The seller was the Linz nitro-fertilizer works.

This company has been carrying out a big export drive aimed at the Far Eastern market. Within the framework of this program a sales representative was sent to Peking and he sold the Chinese government on the deal.

Sulfur for U.K.

The Chilean Foreign Trade Council recently authorized the export of 10,000 tons of sulfur to the U.K. The value of the shipment, in terms of U.S. dollars, has been placed at $30,000.

DDT Resistance

The development of resistance by disease-bearing insects to insecticides has become a public health problem of the greatest importance, according to a resolution adopted by the executive board of the World Health Organization which met recently in Geneva, Switzerland.

Dr. M. G. Candau, director general of WHO, said that 32 countries have reported insect resistance to DDT and other new insecticides. Disastrous results to world health could result from this situation, he said.

The conference adopted a resolution which said that a determined effort must be made to avoid what might well become a catastrophe for world health, and that the world must assume responsibility for coordinating and stimulating research to combat this new danger.

Production Rise

Australia's Division of Industrial Development reports that the country's superphosphate industry is working close to capacity and that production will be upped to 2.2 million tons in 1955-56. This will represent an increase of 12% over the previous 12 months.

Currently, production is sufficient to meet the calls made in all states except New South Wales and South Australia. It will be at least two years before the demand in NSW is met but in SA the situation is expected to level off this year.

The demand for superphosphate in Australia continues to mount and manufacturers are taking steps to meet the calls.

Correction

In the Jan. 30 issue of Croplife (page 19) the capacity of an ammonia plant being built in Japan for Nihon Gas Kagaku Kogyo K.K. of Tokyo by the Chemical Construction Corp. of New York was incorrectly stated, due to a typographical error, at 10 tons a day. This should have read 100 tons a day.

General Chemical Division Develops New Organic Miticide

NEW YORK — Development of a new organic miticide for pre-bloom use on certain fruits has been announced by the General Chemical division of Allied Chemical & Dye Corp. Trade-named "Genite" EM-923, the chemical is 2,4-dichloro pehnyl ester benzene sulfonic acid.

The product will be made available to fruit growers on a nation-wide scale this spring, according to a company spokesman. It will be sold in five- and 30-gal. drums and in one-gal. jugs through General Chemical's regular chain of "Orchard Brand" dealers. In Canada, General Chemical's affiliate, Nichols Chemical Co., Ltd., will handle distribution. Approximate retail price will average $7 gal. on basis of container size.

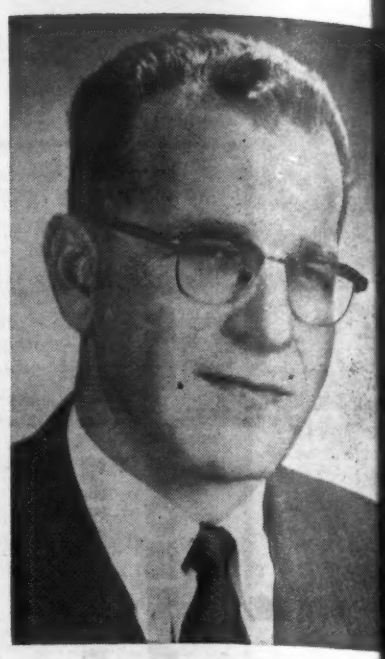
General Chemical reported that a single application will control early mites on apples, peaches and other fruits. Its effectiveness on early season mites, such as European red mite and clovermite (bryobia mite, brown almond mite), was said to provide control lasting into mid-summer, reducing the number of mid-summer mite sprays needed.

Recommendations for dormant to petal fall use cover apples, peaches, pears, plums, prunes and almonds.

The new miticide has the property of killing only mites, and these in all stages, including overwintering eggs, according to the announcement. It was described as virtually non-toxic to beneficial insects and bees when used under normal spray conditions.

"Genite" has been tested at experiment stations in 28 states and three Canadian provinces. Outstanding results were reported with its extensive use for the past several years by commercial growers in California. The miticide is compatible with most pre-bloom spray materials and may be applied at any time from dormant to petal fall sprays.

General Chemical said the significance of the new product for 1956 fruit spray schedules is evidenced by the fact that mites have become one of the most serious pest problems faced by commercial fruit growers in recent years, causing multi-million dollar losses in undersized, poor quality fruit.



George V. Dupont

George V. Dupont Named General Manag Of Diamond Black Leaf

CLEVELAND, OHIO — Promoti of George V. Dupont from manag of manufacturing operations to ge eral manager of Diamond Black Le Co. was announced here Feb. 7 Loren P. Scoville, president.

Mr. Dupont succeeds John W. Ke nady, who leaves the Diamond Bla Leaf organization to return to Di mond Alkali Co. in a new capacit

Mr. Kennady last week was nam sales manager of agricultural chem icals for Diamond Alkali, succeedi L. J. Polite, who is now produ sales manager covering a group organic chemica'ls having diverse i dustrial uses. (See page 8 of t Feb. 6 issue of Croplife.)

Mr. Dupont joined Diamond A kali in 1940. In 1941, he becam supervisor and later assistant supe intendent of the Magnesium Chlorid Department at the company's Paine ville Works, when that manufactu ing unit was operated in conjunctio with the Diamond Magnesium C Thereafter, he was assigned to t Diamond Planning Staff, which, turn, subsequently became the co pany's Central Engineering Depar ment.

Promoted to office supervisor the department in 1946, Dupont w advanced to staff engineer the follo ing year, elevated to department manager in 1951, and to chief st engineer in 1954. He was nam manager of manufacturing oper tions for Diamond Black Leaf March, 1955.

A native of Montgomery, Al Mr. Dupont was a resident of Lou ville, Ky., prior to 1934, when he w graduated with a B.S. degree chemical engineering from Purd University.

New Measures Saving Water in West Texas

LUBBOCK, TEXAS—The vast u derground water supply in West T as has been depleted much less th peop'e think, according to Gord Willis and Bill Broadhurst, offici of the High Plains Undergrou Water District. The water table been lowered from 10 to 15% si irrigation became popular a years ago.

Recent legislation that led to creation of water districts may instrumental in equalizing the amo of water pumped out with that back into the ground. One accom lishment, according to Mr. Bro hurst, is the spacing of water w to keep down interference dur heavy irrigation periods.

Another conservation measure the installation of underground c crete pipe. About 1,500 miles of it been used since 1948.

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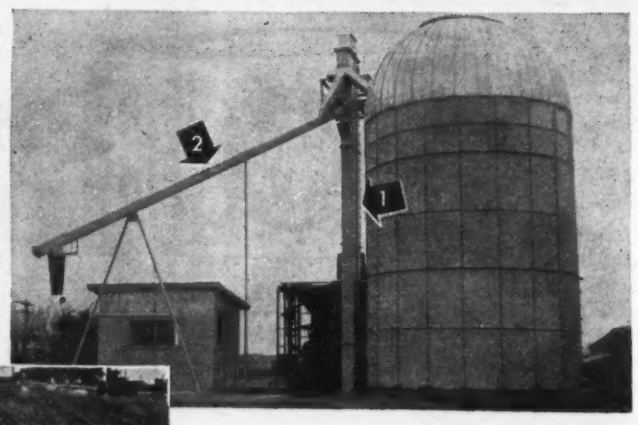

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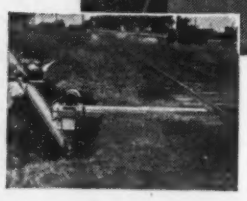

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IOWA FERTILIZER DEALERS

(Continued from page 1)

mple, there's not much point in ap-ying enough fertilizer to grow 100 ," he said.

However, Mr. Duncan stressed the portance of supplying the soil with proper balance of nutrients so that lants can utilize available plant oisture in the most efficient man-er. A normally developing plant akes better use of water than a lant that is developing slowly or oorly because of insufficient nutri-nts. This fact provides the reason or putting on a moderate level of rtilizer even in a dry season, Mr. uncan said.

Another factor is the heavier than ormal fertilizer carry-over from 955. Mr. Duncan pointed out that ry weather last summer has result-d in less fertilizer being used by he plants and also that less has eached out of the root zone.

The continuing shortage of subsoil oisture does not mean that good orn yields are impossible in 1956, Mr. Duncan explained. He pointed o 1954 as an example of a year in hich good rainfall, with good dis-ribution, developed a good crop de-pite low subsoil moisture in the pring. The situation facing farmers his spring is similar to 1954, except hat it is a little more serious. Mr. uncan cautioned that calculations ere only on a basis of normal rain-all. Rainfall probabilities have an qual chance to be below normal.

Even farmers caught tightly in the ost-price squeeze shou'd think twice efore deciding against investing in rtilizer this spring, a farmer man-gement specialist, Ray Beneke, told he group.

Few alternatives of investment on the farm hold out the promise of more returns per dollar invest-ed. A return of $2 or $3 per dollar invested in fertilizer is not un-usual, he reminded the group. Mr. Beneke sees little prospect for a change in the present price rela-tionship between corn and fertilizer in 1956.

"Fertilizer offers a farmer a profit pportunity involving little price isk," said Mr. Beneke. And he point-d out that fertilizer prices have been ne of the few exceptions to rising arm costs.

Mr. Beneke expects that farmers ith amp'e capital will make little r no cutback in fertilizer use this ear, although moisture problems ight well be a factor in some re-uction. However, the number of armers with capital limitations will e greater this year.

John Hanway, head of the soil test-ng laboratory at Iowa State Col-ege, tol'd the group that there is no ubstitute for a soil test to determine he fertilizer needs on a specific piece f land. He backed up his statement ith results of a summary of a quar-er of a million soil tests made by he laboratory in the past 10 years.

General soil recommendations can be developed for a county or soil asociation area, this summary illustrates. But, at best, such gen-eral recommendations can't be more than 75% accurate for in-dividual farms, Mr. Hanway said.

A chance of being wrong even once ut of four times is too great a isk for a farmer, considering the vestment necessary for fertilizer, e declared. This is especially true hen an accurate soil test for in-ividual fields can be had for small ork and expense on the part of the rmer.

Soil insecticides can work hand hand with ferti'izers in boosting rn yields, Harold Gunderson, ex-sion entomologist, told the group. Experiences of the last several rs have shown that soil insecti-es can improve yields by 7 to 10 per acre, he declared. The in-creased yie'ds mean that stand losses are cut, while at the same time, production costs per unit are also reduced.

During the past three years the number of acres in Iowa treated with insecticides has increased from 324,000 acres to 1,245,000 acres, he said.

Any of the soil insecticides can be mixed with fertilizer for applica-tion, Mr. Gunderson pointed out. An insecticide can be put in the row along with starter fertilizer. An al-ternative is application of the insecti-cide alone at p'anting time. When they are applied alone, he suggested combining the insecticide - spreading with some other field operation.

Control measures and chemicals are designed to hit at three classes of insects—those attacking the seed, the group that attacks the seedling and the insects that harm the estab-lished plant.

Mr. Gunderson made these recom-mendations on rates of app'ication:

Where rootworm is the problem, as on ground rep'anted to corn for the third or additional time, a half pound application in the row will give ef-fective control for one year.

In a level field, with no erosion problems, where corn is to be grown for several years, 1 lb. per acre should be broadcast. The higher rate provides protection against rootworm for two or three years.

When corn is planted on sod, 2 lb. of insecticide was recommended to control a wide variety of soil insects.

TURF GRANT

FORT COLLINS, COL. — The Better Lawn and Turf Institute of Kansas City has granted $300 to Col-orado A&M College for work in turf improvement. The money will be used to expand work consisting of strain and variety testing, weed control, use-of-water studies and lawn fer-tility.

Wording Worked Out For Mixture Labels

PORTLAND, ORE. — The Pacific Northwest Plant Food Assn. and fed-eral and state officials of Oregon and Washington have worked out methods of complying with labeling require-ments for custom mixes containing insecticides-fertilizer materials.

Through the cooperation of D. W. Dean, field representative on the west coast for the Pest Control Regulation Section of the U.S. Department of Agriculture; J. D. Patterson of the Oregon Department of Agriculture and Auburn Norris, Washington De-partment of Agriculture, proper word-ing for custom mix labels containing aldrin, heptachlor and chlordane were prepared in order that manufacturers would be within the law.

Orders for these labels were taken through the association and are now being printed. Manufacturers who have not already placed orders can be accommodated by special orders but at a higher price.

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State Agricultural Experiment Stations and other authoritative sources are recommending fertilizers with ever increasing plant food units per ton. High analysis fertilizers are in demand because they give more for each fertilizer dollar. Meet this demand by incorporating Davison's New Triple Superphosphate in your formulation.
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Sales, Earnings of IMC Show Decrease In Second Quarter

CHICAGO — Net sales of International Minerals & Chemical Corp. for the second quarter of its current fiscal year, the three months ended Dec. 31, 1955, amounted to $21,632,515, a decrease of 3% from $22,282,396 for the second quarter of the previous year ended Dec. 31, 1954.

Earnings before income taxes amounted to $1,436,359 for the quarter compared with $1,750,928 for the corresponding period in 1954. Net earnings after taxes were $1,314,359, which was equivalent to 52¢ a share on the common stock outstanding, compared with $1,443,928, which was equivalent to 58¢ a share on the common stock outstanding a year before.

Net sales of the corporation for the six months ended Dec. 31, 1955 were $37,620,755, a decrease of 4% from $39,338,744 for the first half of the preceding fiscal year.

Earnings before income taxes for the six months ended Dec. 31, 1955, were $576,850 compared with $2,512,283 for the same period in 1954. Net earnings after taxes for the six months were $454,850 compared with $2,005,283. The after tax earnings for the six months were equivalent to 11¢ a share on 2,331,687 shares outstanding at Dec. 31, 1955, compared with 78¢ a share on 2,326,297 shares outstanding at Dec. 31, 1954.

Both sales and earnings for the six months ended Dec. 31, 1955 were adversely influenced by the costly four months' strike in the Florida phosphate fields which was not settled until Oct. 1, 1955. It is anticipated that earnings for the six months ended June 30, 1956 will be considerably better than for the corresponding six months ended June 30, 1955, since several of the corporation's new facilities which, during start-up were a burden to earnings, have now reached break-even stages.

Millers Asked to Check With Pesticide Makers

CHICAGO — Manufacturers and distributors of insecticides and fumigants used on grain and containing chemicals which may be subject to residue tolerances established by the Food and Drug Administration should be consulted by millers as to the proper dosage to be used in order that the limits provided in the new regulations are not exceeded.

This suggestion was issued by the Millers National Federation, Chicago, on Jan. 31 in its publication "The Hook-Up."

The Federation said it appears that many of the fumigants and insecticides used on grain will probably be given an exempt status. It was pointed out, however, that in order to be absolutely safe, FDA will issue tolerances in the case of some substances, such as was recently done for chlordane, methoxychlor, methyl bromide and parathion.

Dr. Harold J. Miller

Dr. Harold J. Miller Named to Pennsalt Of Washington Post

TACOMA—Addition of Dr. Harold J. Miller to the technical development department, Pennsylvania Salt Manufacturing Company of Washington has been announced by Errol Karr, vice president.

Dr. Miller, who has eleven years research experience in agricultural chemicals, attended Ohio State and Cornell Universities, receiving his doctorate in plant pathology at Pennsylvania State University where he became assistant professor, plant pathology.

Joining the Pennsylvania Salt Manufacturing Co. in 1948 as plant pathologist at its Whitemarsh Research Laboratory near Philadelphia, Dr. Miller continued research in agricultural chemicals and was active in the American Association for Advancement of Science and American Phytopathological Society.

Dr. Miller will establish his new office at Tacoma, which is the national headquarters for agricultural chemicals, Pennsylvania Salt Manufacturing Company of Washington. Mrs. Miller and sons, Louis, 15, and Craig, 11, will join Dr. Miller in Tacoma after the expiration of the spring school term in Philadelphia.

Frank P. Maxey Joins Frontier Chemical

WICHITA, KANSAS — Frank Maxey has joined the Frontier Chemical Co. as sales representative. He will operate out of Dallas, Texas after indoctrination at the company principal offices in Wichita, Kansas according to M. E. Clark, vice president—marketing.

Mr. Maxey was associated for several years as a product manager with Sharples Chemical Division in Philadelphia, and also worked with the Munising Paper Co. at Munising, Michigan. He served as a lieutenant (j.g.) in the navy aboard a heavy cruiser in the Pacific and North China Sea. He holds degrees from Marquette University, Northwestern University and the Institute of Paper Chemistry.

PESTICIDE SCHOOL

CLEMSON — The fifth annual pesticide chemicals school will be held at Clemson Feb. 28-29. The program is being arranged by Dr. J. H. Corran, head, Department of Entomology and Zoology, and Dr. G. M. Armstrong, head, Department of Botany and Bacteriology, of the Clemson School of Agriculture. In addition, staff members of these departments several other outstanding speakers in the field of animal-, crop-, and household-pest control are expected to appear on the program.

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Many Problems Faced by West Despite Great Progress Made In Chemical Control of Weeds

If we are to view a picture of weed control in the west, we must view it against a backdrop of the land and the people of the region. Weed control is not a thing apart; it is one of the facets of agriculture. The West is a vast land. The eleven Western States include 40% of the total land area of the United States, producing 17½% of the total gross farm income on 14% of the U.S. cropland with 9% of the U.S. farm population. A little more than ⅛ of this cropland —some 20,000,000 acres—is irrigated while the non-cropland includes over 400 million acres of pasture and range. Of the total land area, more than half is owned by the Federal government.

In addition to size the area is characterized by its extreme variability. Precipitation varies from almost none in the desert areas to over 100 inches per year. The seasonal distribution is such that most of the rain falls during the winter season, and a water deficiency prevails over most of the area. Temperatures vary from sub-alpine to sub-tropical and crops are grown from elevations below sea level to 6,000 feet or more in the mountain valleys.

Soils of which there are more than 400 named series in California alone, include sands, clays, loams and much varying in productive capacity from almost worthless to very good, and often with salinity problems. More than 200 crops are grown commercially in the region. Farms average over 700 acres in size, but more than one-third of the total number of farms are less than 30 acres and more than 10% are over 1,000 acres.

These factors of area and variability overlay our efforts to solve the weed problems of the West. There is no average weed problem—each one must be met in context with the factors that exist at the time. Field data under all the possible conditions of the variables is never available. Consequently, we must often depend on an extension of the information we do have and on our knowledge of the basic requirements of the method we are using, whether it be cultivation, biological control, a cropping sequence, or chemicals.

In common with all regions, we are short of manpower to develop and refine methods of weed control for the multitude of situations that confronts us. A survey of the Agricultural Colleges in the 11 Western States in 1953 indicated the equivalent of 1⅓ men per state working on weeds and weed control. This did not include Federal workers and there has been some increase in state workers since that time. Nevertheless, this is a woefully inadequate force in view of the problems that exist.

In the time available, I can no more than outline some of the major problems in the Western States, realizing that in each state and on each farm the major problem is the one existing there, at that point, at that moment.

Some two-thirds of the total cropland in the West is not irrigated. The principal crop is grain, with the area producing more than ¾ billion dollars worth of wheat, barley and oats. The use of 2,4-D for weed control in these crops has become standard practice with much of the spraying done by airplane.

The cruciferous weeds that long plagued the grain grower are now not a serious problem, but a few broad-leaved annual weeds such as Russian thistle and others in local areas may require special treatment techniques or formulations. An increasing problem in grain is wild oats. Several of the stations are working on the problem with both cultural methods and chemicals.

Damage to grain from 2,4-D application and its relation to time of spraying has also been studied in several of the states. An interesting aspect of the weed problem in grain has been the work on chemical summer-fallow at the Central Montana Branch Station.

Other crops grown on these non-irrigated lands are dry peas, green canning peas, alfalfa for both seed and hay, flax and numerous seed crops. Weed control presents problems in each of these. Wild oats and volunteer grain are often major pests in dry peas. The most satisfactory chemical control has been from the use of IPC. Dodder is a problem in all the alfalfa areas of the West. General contact sprays and CIPC have been most promising as chemical controls. Annual weeds in dry land alfalfa have been controlled with CMU in tests at the Utah station.

Flax has been weeded with 2,4-D, MCP and IPC, depending on the weed problem, but the margin of safety is not great and care in rate and timing is essential. Perennial weeds take a serious toll from the dry farmed areas of the West.

In the northern states, Canada thistle and quack grass are predominant with leafy spurge a common problem. Throughout the region bindweed (or wild morning glory), white top and Russian Knapweed occur. Control of a number of these weeds with soil sterilants has long been a common practice. Sodium chlorate and mixtures of chlorate and boron compounds are still used. Carbon bisulphide was probably first used on a large scale for bindweed control in Idaho.

Current interest tends toward the use of the newer organic herbicides, both as soil sterilants and systemic spray treatments. Elimination of weed competition in crops with 2,4-D has

(Continued on page 18)

EDITOR'S NOTE

This article, "Problems and Progress of Weed Control in the West," was prepared by Dr. W. A. Harvey, extension weed control specialist at the University of California, Davis, for presentation before the charter meeting of the Weed Society of America, New York. The meeting was held Jan. 4-6.

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Illinois Custom Operators Informed on New Materials And Warned About Residues

URBANA—Some answers to questions about insecticide residues raised by the Miller Amendment, a new method for controlling European corn borer, and equipment problems with liquid fertilizer solutions were among the informational highlights presented at the eighth annual Custom Spray Operators' Training School held Jan. 26 and 27 at the University of Illinois.

Dr. George C. Decker, head of the economic entomology section of the Illinois Natural History Survey and the Illinois Agricultural Experiment Station, warned the more than 500 men attending the school that, "with tolerances that must be met on all raw agricultural products marketed in the future, it becomes increasingly imperative that all of us acquire a working knowledge of the factors that determine the magnitude and persistence of insecticide residues."

The major factors affecting residue persistence or loss, according to Dr. Decker, are erosion—wind, rain and mechanical—which is common to all, variable and unpredictable; growth and formulation, which likewise are common to all, and evaporation and decomposition, which are specific.

Dr. Decker pointed out that the growth of plants after treatment may greatly dilute residues as expressed in terms of parts per million.

For example, even if there were no other factors involved, a residue of 100 p.p.m. on small apples weighing 4 grams at mid-May would be reduced to only 3 p.p.m. at harvest time when the apples averaged 146 grams in weight.

In passing quickly over decomposition as a factor, Dr. Decker reminded the spray operators that such products as pyrethrins and rotenone decompose rapidly and that tetraethyl pyrophosphate, in the presence of water, hydrolizes so rapidly that it has little or no toxicity to insects or man in a matter of a few hours.

In his opinion, the vapor pressure or volatility of an insecticidal chemical is one of the factors sprayers dare not overlook in any consideration of insecticide residue persistence or rate of loss. He noted that there are those who regard insecticides as non-volatile. "But that is not the case," he said.

If the other factors are equal, there is a definite relationship between vapor tension and the rate of residue loss, he reported. In his studies, materials tended to disappear consistently in this order: lindane, aldrin, dieldrin, and DDT. When the aldrin was all gone, the entomologist said, he still had 40% of the DDT left—under laboratory conditions where other factors were eliminated.

Experiments also showed, Dr. Decker said, that for any given material under identical conditions, the residue would reach zero (less than 1 p.p.m.) at a given time, regardless of the dosage applied.

In practice, this means that after three weeks of treatment, when the residues of lindane and aldrin (dosage rate ¼ lb. an acre) are at or near zero, there was still more DDT and toxaphene (dosage rate 1-1½ lb. an acre) than there was in the original deposits of lindane and aldrin.

The audience was cautioned, however, that this is no indication that DDT, toxaphene or any of the less volatile materials are too persistent to use, nor does it show that the more volatile materials are perfectly safe under all conditions. "It all depends," he said.

William H. Luckmann of the Illinois Natural History Survey and T. A. Brindley, Iowa State College, reported during the School that granular formations in general have given as good or better control of European corn borer than have spray applications.

DDT is the only insecticide in a granular formation which was tested sufficiently to warrant their recommendation for control of the corn borer, however.

For application with ground equipment, granules impregnated with 5% DDT should be applied at 15-20 lb. an acre. Twenty to 25 lb. an acre of 5% granules should be used when application is made with airplane, the report said. DDT granules, according to Messrs. Luckmann and Brindley, are effective against both first and second generations of corn borer.

Granular forms of EPN and dieldrin showed considerable promise, but the two researchers were not yet ready to recommend these materials. They reported that if airplanes are properly equipped, they are suitable for applying granules. Equipment designed for air seeding of rice gives probably the best distribution. Air-seeding devices apply granules better than conventional crop dusting equipment, they said.

"If you do want to use crop dusting equipment," they added, "you should remember that the effectiveness is variable and that all such units should be carefully checked for rate and pattern before using for applying granules."

For best distribution, aircraf should fly 35 to 40 feet above th ground. At that height, according t Mr. Brindley, good coverage can b expected on 14 to 15 corn rows.

Mr. Luckmann noted that a goo many methods for timing applica tions of insecticides for corn bore have been suggested and are now i use. He warned that many of thes methods are difficult and, in the hand of less experienced persons, may b inaccurate.

Illinois has developed and carefull studied a simple and accurate tec nique for properly timing insecticid treatments based on the maturity the corn plant. This method is know as the "tassel ration index." It work like this:

Compare the height of the tass and the height of the corn plant its to establish a relationship, which e presses the maturity of the plant a number between 1 and 100.

For example, if the extended height of the corn plant is 45 inche and the distance from the base the plant at the ground to the t of the tassel is 9 inches, then th plant has a tassel ratio of 20. D dividing the height of the tassel

(Continued on page 21)

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Fertilizer Dealers Given Sales Tips, Technical Data at Oregon Convention

PORTLAND, ORE.—The first annual Fertilizer Dealers Day, sponsored jointly by the Pacific Northwest Plant Food Association and the Soils Department of Oregon State College was held on the college campus Jan. 18. Intended as an educational program for fertilizer dealers, the meeting was considered an outstanding success because of the 150 in attendance, over half were fertilizer dealers.

Dr. Horace B. Cheney, head of the soils department, opened the conference by saying fertilizer manufacturers, dealers and the college had the same common goal—to serve the public and help the farmer make a profit. He advocated only sound recommendations be made to producers regarding the types of fertilizer that should be used on their soil. Experiments of the college can only indicate types, due to the difference in soil, water levels and weather conditions.

He warned against making recommendations on fertilizer types on adjoining farms because of the differences in soil types and reported that the college had run over 200 experimental plots in 1954 and more than that last year. However, he said, results from these can be taken only as "indications," rather than being regarded as positive, due to the variable factors involved.

Mr. Cheney said that because of these factors, it is difficult to arrive at a final recommendation for an individual farmer. "A farmer wants to know what fertilizer elements he needs to apply and how much of each nutrient he should use. He also wants to know when and how to apply the various fertilizers and needs this information for each of a large number of different crops. To complicate matters, further, each of these crops may be grown on any one of a wide variety of soil types, and the past soil management practices used on each field must also be taken into account," he pointed out.

In discussing soil tests further, Mr. Cheney said that their value lies in setting forth an inventory of plant nutrients in the soil. More than 6,000 samples have been made in Oregon during the past few years, and the laboratory is an aid to the county agent in making fertilizer recommendations. Soil tests are a help to locate deficiency areas as well as being helpful in revealing what nutrients are needed to bring the soil's fertility to an optimum point.

Recommendations for various crops were presented at the meeting, by Oregon State College agronomists. The state's soil testing program was described by L. A. Alban, who pointed out that the local county agent is the ideal person to interpret the soil tests and make the localized recommendation. County agents know the farmers, climate, soil types, and cropping and management practices of their counties better than anyone else. Mr. Alban called them the "key men in the soil testing program."

Each year the college soils laboratory compiles a summary of the results of the soil tests it carries out.

AT OREGON CONFERENCE—Above are scenes from the annual Fertilizer Dealers Conference, held last month at Oregon State College, Corvallis, Ore. From left to right are:

Top panel: Left photo, George Kitzmiller, Pacific Supply Cooperative, Portland, Elmer Erxleben, Dairy Cooperative Assn., Portland, and Arthur Cole, Oregon Department of Agriculture, Salem; right photo, Thomas L. Jackson, Oregon State College extension soils specialist, conference chairman, and Alec McDonald, Consolidated Mining & Smelting Co., Vancouver.

Center panel: Left photo, Thomas Pfund, Chehalem Valley Feed Mills, Newberg, Ore., and Lewis Hildebrandt, Woodburn (Ore.) Feed and Supply Co.; right photo, Knox McDaniel, White Star Concentrates, Inc., Portland, and Alec Runciman, Webfoot Fertilizer Co., Portland.

Lower panel: Left photo, Don Burlingham, Woodburn (Ore.) Feed and Supply Co., and Neil Evenson, Pacific Grains, Inc., Rickreall, Ore.; right photo, Dr. H. B. Cheney, head of the Oregon State College Soils Department.

In this summary, the state is broken up into five geographical areas, and in each of these areas it's often possible to see basic trends or needs of soil fertility developing.

Mr. Alban said this helps to locate areas of probable plant nutrition difficulties in the state. Experiment station workers can then go into these areas to carry out research to solve these difficulties before they become serious.

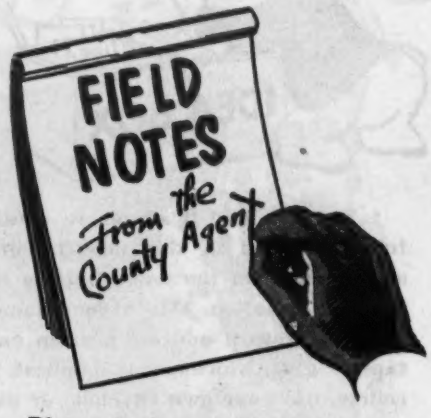
The dollar-and-cents value of liming acid soils was brought into sharp focus by Prof. M. E. Harward of the college soils department. The dollars returned from the dollars invested in a fertilizer program will depend on the liming program carried out on these soils, he said.

Mr. Harward listed two jobs in the liming program. The first is the correction of soil acidity—adding enough lime to bring the soil pH to the optimum level for plant growth of the crop to be planted. This is the most costly step in the program.

The second job, he said, is the maintenance of the pH at the optimum level for the crop or crops being grown. For the average Willamette valley farm, one ton of lime every six years is usually enough to take care of maintenance, he pointed out.

Fertilizer recommendations for sweet corn and pole beans were made by H. J. Mack; and for pastures by H. L. Schudel. Recommendations for small grain and grass seed crops were presented by T. L. Jackson.

Another question that came before the fertilizer dealers was—how far can a farmer afford to go in purchasing and using fertilizer. "Ideally, the farmer can afford to add fertilizer to the point where the value of the increased crop just equals the additional cost," answered Manning Becker, farm management specialist at OSC.



Please don't read this until at least two people can be with you, so all three can answer the questions together . . . provided the three of you can agree or disagree.

1. Business men do more to promote better farming, than farmers do to promote better business. Yes.... No.....

2. It would be better for business, if farmers worked 40 hours weekly, instead of the 60 hours they now work. Yes....No.....

3. It would be better for agriculture if factory workers worked 60 hours weekly, rather than 40 hours. Yes....No.....

4. Both would suffer, but which would suffer most, business or farming, if business men could take over the farms for a year and farmers take over the business establishments for the year. Business....Farming.....

5. Thirteen percent of our population live on farms . . . would it be better for the U.S. if the farm population was 10%, or 25% of the total. 10%....25%.....

6. It would be better for business if all farms contained 500 acres each, rather than all farms averaging 80 acres. 500....80.....

7. Fertilizer is worth more to business than it is to agriculture. Business....Agriculture.....

8. Good roads leading into a town are worth more to the town, than good streets in the town. Roads.... Streets.....

9. Tractors on farms mean more to business, than do adding machines or typewriters. Tractors....Adding Machines.....

10. It would be better for an area to have ten factories with a million dollar payroll each, than the same area to have ten million dollars worth of farm commodities to sell annually, or would it? Ten Factories ....Ten Million in agricultural commodities.....

Now you had better check back over the above, you may agree to disagree . . . why?

Harold E. Myers to Join University of Arizona

MANHATTAN, KANSAS—Harold E. Myers, acting director of the Kansas Agricultural Experiment Station and one of the nation's leading soil scientists, has been named dean of the school of agriculture at the University of Arizona, Phoenix. Dr. Myers' appointment will be effective about March 1.

The new dean at Arizona received his B.S. in agriculture at Kansas State College in 1928, his M.S. from the University of Illinois and his Ph.D. from the University of Missouri in 1937. He became head of the department of agronomy at Kansas State in 1946 and in 1952 was named assistant dean of the school of agriculture and associate director of the Kansas Experiment station.

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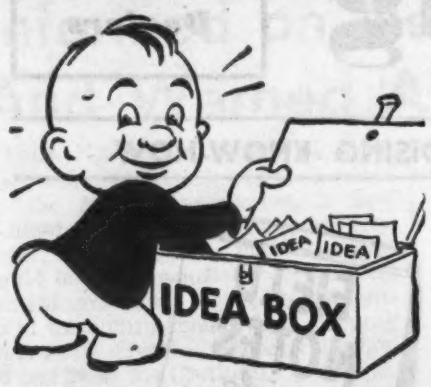

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You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

No. 6373—Recording

"The D-D Hop," a new "scat" tune, has joined "Boll Weevil Blues" and "Corn Huskin' Blues" in Shell Chemical Corporation's music library. Designed essentially as a commercial to accompany the firm's 26-week sponsorship of the noon weather show over the Tobacco Network in the tobacco belt, the tune has also been prepared as a full length popular recording. While it entertains, it tells the importance of soil fumigation and D-D's part in controlling nematodes. The recording features Julie Conway and the Nelsonics, backed by a 6-man musical group. People who want to use the platter can secure it by checking No. 6373 on the coupon and mailing it to Croplife.

No. 6374—Fertilizer Handbook

The soil improvement committee of the California Fertilizer Assn. is offering its "Western Fertilizer Handbook," now in its second edition, for $1 per copy. Orders may be sent directly to the California Fertilizer Assn., 475 Huntington Drive, San Marino 9, Cal. Called a reference work of interest to all persons interested in soil fertility and plant nutrition, the handbook contains 160 pages and features 12 color plates, most of which depict plant food deficiency symptoms. Many black and white illustrations and a glossary of tables, terms and conversions are also included. Single or multiple copies may be obtained for $1 each.

No. 5383—Hydraulic Lift

The Crown Controls Co., Inc., has announced features of its new E-Z lift (model LT-1000) 1,000-lb. capacity hydraulic lift for use where limited space is a problem. The lift is for one-man operation and has a push-pull handle which operates the hydraulic mechanism located at a convenient height on the lift. Loads can be elevated to any height between 5¼ in. and 54 in. above the floor. The lift rolls smoothly on roller bearing equipped rubber front wheels and roller bearing equipped swivel-type rear casters. The positive-action brake is foot operated and has a trigger release. The lift is equipped with a safety overload release which refuses loads of more than 1,200 lb. Constructed of strong tubular steel, the lift is 64 in. high, 24½ in. wide and 35 in. long. It weighs 270 lb. The safety plate platform is 24 in. by 24 in. Straddle capacity is 16¼ in. Secure more complete details by checking No. 5383 on the coupon and mailing it.

No. 5384—Sales Brochure

A new sales management brochure, "Who's Selling Who?" is being made available by Cappel, MacDonald & Co. The brochure emphasizes the theme, "getting men to sell." In the foreword can be found the following phrase: "Fact No. 1. Salesmen and salesmanship are not perfect. (What is?). Fact No. 2, Sales, salesmanship and salesmen can be improved." It is explained further that the criticism offered is meant to be friendly and helpful to open the door, at least partially, to the room for improvement that exists. Secure the brochure by checking No. 5384 on the coupon and mailing it to this publication.

No. 6370—Products Catalog

The Wil-Kil Pest Control Co. has produced a catalog describing its service, chemicals and equipment. Sections of the catalog are devoted to livestock insecticides, municipal insecticides and related chemicals, fumigants, weed and brush control products, wood preservatives, food plant insecticides and spraying equipment. Prices and shipping information is also available. Secure the literature by checking No. 6370 on the coupon and mailing it to Croplife.

No. 6371—Duster Package

"Whiff'n poof" describes the action, appearance and the sound of a new squeeze duster package for Du Pont garden dusts. The Du Pont spokesmen said one squeeze of the flexible package sends a puff of dust far into a mass of foliage. Four of the company's garden dusts will be packaged in the package during the coming year. The new 8-oz. package is a cylinder of "Alathon" polyethylene resin, fitted with a directional nozzle to send the dust where it is aimed. Labels, lids and bottoms of the package are all "weatherproof" to keep the package serviceable through repeated re-fills, it is claimed. Du Pont insecticide-fungicide combinations to be available in the new container are rose insecticide and fungicide, floral dust, vegetable garden dust and tomato dust. Secure more complete details by checking No. 6371 on the coupon and mail it to this publication.

No. 5376—Draft Curtain

The Bemis Bro. Bag Co. has complete information available on its retractable curtain, called TransWall, for plants, warehouses, etc., to shield doorways during cold weather. The curtain slides readily out of the way for free use of floor space, the manufacturer states. Other features claimed are: It is built of a heavily coated fabric and installs easily on a single overhead track. Nylon rollers permit instant retractability. Little space is used when retracted. For example, a curtain 20 feet wide retracts to only 2 ft. TransWall is available in custom sizes to suit individual needs. Complete information may be obtained by checking No. 5376 on the coupon and mailing it to this publication.

No. 6372—Soil Insect Film

"Corn's Hidden Enemies," the film story of one corn farmer's successful fight against soil insects, is being reissued free of charge to county agents and other farm leaders by the Shell Chemical Corp.

The film deals with the soil insect problems of a Danville, Iowa, corn farmer named Howard Waters, and the measures he took to save his crop. In the movie, Mr. Waters calls on the local county agent for help in his fight against the underground pests which are ravaging his fields. The agent, in turn, asks advice from Iowa State College where entomologist John H. Lilly suggests that a chemical insecticide be used. Mr. Waters follows the entomologist's advice and applies aldrin to his soil and the film shows the results. When ordering, it is recommended that at least one alternate delivery date be listed. The film has a running time of 12 min.

No. 6366—Water Conditioner

The Packard Manufacturing Co. is marketing a new water conditioner that is claimed to eliminate and prevent scale and corrosion formations in boilers and water systems without the use of chemicals. The conditioner is for use on boilers, air conditioning and refrigerating systems and other industrial applications where water problems exist. The conditioner is manufactured in sizes handling from 6.5 to 1,760 gallons per minute for connection with corresponding stand

Send me information on the items marked:

- ☐ No. 5383—Hydraulic Lift
- ☐ No. 5384—Sales Brochure
- ☐ No. 5376—Draft Curtain
- ☐ No. 5379—Tax Booklet
- ☐ No. 5380—Booklet
- ☐ No. 6364—Catalog
- ☐ No. 6366—Water Conditioner
- ☐ No. 6367—Movie
- ☐ No. 6368—Containers
- ☐ No. 6369—Termite Control
- ☐ No. 6370—Products Catalog
- ☐ No. 6371—Duster Package
- ☐ No. 6372—Soil Insect Film
- ☐ No. 6373—Recording
- ☐ No. 6374—Handbook

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Also Available

The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

rd iron pipe sizes ranging from ¾ in. to 12 in. Larger sizes are also available. Secure more complete information by checking No. 6366 on the coupon and mailing it.

No. 6369—Termite Control

The Shell Chemical Corp. has prepared a new four-page booklet entitled "Termite Control with Dieldrin." It tells how to detect termites and, in a series of illustrations, shows how pest control operators control them with dieldrin. Three types of buildings are considered: Those with crawl space between the floor and the ground, those with a concrete floor flush against the ground and those with basements. Dosage rates per square foot are also explained. The booklet includes a brief history of the pests, their social organization, and the extent of their yearly damage. One section deals with the resemblance of termites to "white ants" and gives hints on distinguishing between them. The use of dieldrin as a protection against termites in the soil is brought out in the final section of the booklet. Secure your copy by checking No. 6369 on the coupon and mailing it to Croplife.

No. 5380—Booklet on Salesmen

How the modern salesman works, what he does, and why, is portrayed in a 32-page booklet entitled "The Salesman Story" published by the Du Pont Company. It illustrates the vital function performed by the nation's five million salesmen and the vast sales effort that employs, directly or indirectly, perhaps 15 million men and women. It relates how the old-time drummer passed out of the scene to make way for men who, by their selling, create new industries and new products that raise the standard of living for all. "The modern industrial salesman is a professional. Gladhanding and back-slapping are not his basic attributes," the documented booklet reports. The "new kind of salesman" must often be part scientist, part economist, or specialist in other fields. "He is mature, in experience and know-how, before he tries to sell." The booklet is available by checking No. 5380 on the coupon and dropping it in the mail.

No. 5379—Tax Booklet

"How to Save Money on Your Farm Income Tax" is the title of a new booklet prepared by the J. K. Lasser Tax Institute and offered free by the Nitrogen Division of Allied Chemical & Dye Corp. The booklet is written in clear, every day language to enable the farmer to grasp his tax deduction situation with a minimum of reading. Among subjects covered are: How to compute your farm income, forms to use, farmer's self employment income, declarations for farmers and crop damage payments. One section is entitled "Special Tax Saving Check List for Farmers." A free copy of the booklet may be secured by checking No. 5379 on the coupon and dropping it in the mail to this newspaper.

No. 6368—Coated Containers

A new bulletin describing how insecticides and other hard-to-handle products which are detrimental to steel containers can be packaged and shipped in standard size steel pails and drums is available without charge. The bulletin has been prepared by Bennett Industries, Inc. According to the company announcement, "Special protective coatings or linings are economically fabricated into the containers as they are manufactured." The statement continues that the company "offers a wide variety of the new lined steel containers called 'Hi-Bake' pails and drums which have phenolic, epon and vinyl resin linings to hold many products that previously caused trouble when shipped in steel." Secure the bulletin by checking No. 6368 on the coupon and mailing it to Croplife.

No. 6367—Movie

A 16 mm. sound and color movie has been produced by the Mackwin Co. to document the company's three years of research on its DDT granular product for controlling the European corn borer. The product is called by the trade name, Mackodee Granules G-20. The movie is available in a limited number and reservations for showing dates are now being accepted by the manufacturer. Secure more complete information about the movie by checking No. 6367 on the coupon and dropping it in the mail to Croplife.

No. 6364—Catalog on Process Plants

Design, engineering, construction and initial operation of process industries plants by the Chemical Plants Division of Blaw-Knox Co. are outlined in a new catalog, entitled "Process Plants by Blaw-Knox." Illustrated with photographs of major projects, the brochure is designed to provide information on the diversity and scope of work undertaken and completed in the process industries field.

Subject matter of the 20-page publication covers the following industries: Fertilizers and pesticides; general industrial chemicals; fine chemicals and pharmaceuticals; petroleum and petrochemicals; plant rehabilitation and modernization, and others. Copies of the catalog, Bulletin No. 2514, are available upon request. Check No. 6364 on the coupon and a copy will be mailed to you.

CFA Encourages Training of Students in Agricultural Sciences

SAN MARINO, CAL.— The California Fertilizer Assn. has sent letters to the 237 instructors of vocational-agriculture in the high schools and junior colleges of California calling attention to the growing shortage of qualified agronomists, entomologists, chemists and other technicians important to agricultural progress.

The contributions which thoroughly trained persons are making in the field of agriculture and in its allied industries are said to be handsomely rewarded, both materially and in personal satisfaction. Three general paths which trained persons may follow include (1) instruction of the next generation of scientific farmers, (2) institutional research and assistance to the farmer and (3) employment in the fertilizer, pesticide, seed and similar industries.

All high school and junior college instructors of vocational-agriculture are urged to use their strongest influence upon their promising students and their parents to assure the completion of their technical educations. This program, if successful, will fill many gaps in the ranks of qualified agricultural technicians, the association says.

The letter concludes with the promise of the association to assist in placing in the commercial fertilizer industry those who are qualified through education, aptitude, and inclination.

QUICK DECLINE

VENTURA, CAL. — Rapid spread of quick decline has become a major economic factor with orange growers in the Fillmore-Barsdale-Piru section of Ventura County, California, Chester J. Barrett, agricultural commissioner, has reported.

Farmers get more profit from fewer acres with

PHILLIPS 66

AMMONIUM NITRATE

A companion high nitrogen fertilizer for your mixed goods!

Phillips *66* Ammonium Nitrate is the right nitrogen fertilizer to use with quality mixed fertilizer. When they use Phillips *66* Ammonium Nitrate, farmers realize lower unit production costs . . . more profit per acre! They make more money with less work, less worry—and from fewer acres.

Phillips *66* Ammonium Nitrate is *guaranteed* to contain 33.5% Nitrogen: 16.75% Nitrate Nitrogen, 16.75% Ammonia Nitrogen. The new multi-wall polyethylene-lined bags assure a free-flowing, easy-to-use product.

Phillips advertises its high quality, high nitrogen fertilizers all year 'round in a comprehensive list of leading farm magazines. And, of course, you can always depend on Phillips for prompt, efficient service.

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Again we tell 3½ million farmers

Fertilizer Grows Farm Profits

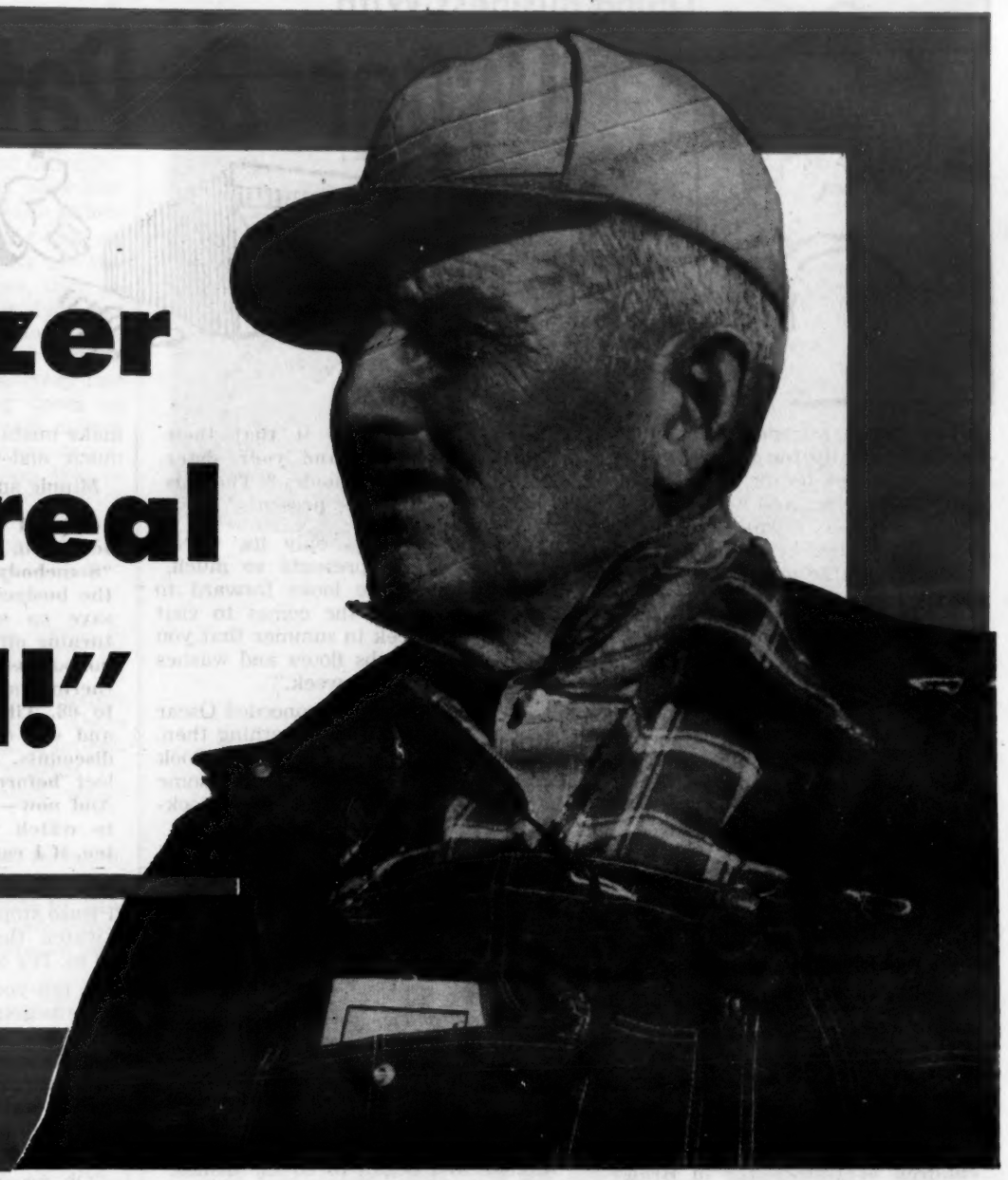
Fertilizer is vitally important to the farmer who is faced with acreage restrictions and lower prices for crops he sells and higher costs for things he buys.

Fertilizer produces big extra yields from fewer acres, thus assuring a greater return from land, labor, machinery and other fixed expenses.

The importance of fertilizer to the farmer is being brought to the attention of 3½ MILLION readers of farm magazines in a powerful and continuing campaign conducted by Nitrogen Division, Allied Chemical & Dye Corporation.

The advertisement on the opposite page is one in a series of big, full-page, two-color ads. More will follow. We trust that this campaign is helpful to you and we will greatly appreciate any comments or suggestions you may wish to send us.

"Fertilizer is a real friend!"



've been farming a long time. I've built up my business with more land, more machinery d more fertilizer, along with a lot of work. I've d corn and fed corn, and burned it in the stove. e got a cribful sealed up now. I've seen $26 hogs d $34 cattle, as well as present prices. In all this e, I figure I've worked my way out of every eeze that came up. When I get pinched, I bring wn my costs a little more. Right now fertilizer ps me cut costs better than anything else.

"Tractors, machinery and fertilizer kept me in siness when my son and the hired man went in e army. More land and more fertilizer kept us ng when the boy came back—with another mily to feed. I figured it was easier to make oney on a big farm with enough plant food in the l to give crops the gumption to grow.

"I don't grow more than 40 acres of corn now. e used to grow 100. But we get as much feed off e 40 as we did off the 100. And every bushel of n and every ton of silage costs us less. We use ty of fertilizer to get 90 to 110 bushels of corn he acre. We used to get 40 to 50. Hired hands expensive, land and taxes keep going up. But ilizer is still about as low in price as it was 10 0 years back.

"With lots of fertilizer I can grow corn for less than 60 cents a bushel. It used to cost me $1 a bushel when I used less fertilizer. I can stay in business today growing 60-cent corn. With fertilizer, I can even show a profit on my oats. I get 4 tons of hay to the acre now instead of 1½. I've doubled the pounds of beef I get off of pasture. Fertilizer is a real friend—it has been the biggest single help I've had to keep making money from farming.

"Spring won't wait for 1956 farm programs to get ironed out. If somebody can help jack up the price of crops, fine! But I'm going to make sure I grow my crops as cheap as I can with the help of plenty of fertilizer! That's my farm program!"

Fertilizer grows farm profits. Fertilizer gives you more crops for your money, labor and time, on every acre you plant to cash crops, feed crops and cover crops. Fertilizer cuts costs per bushel or per ton of crop produced. Use more fertilizer to open up your margin of profit between costs and sales prices and you'll never be a marginal farmer!

The fertilizer industry serves the farmer. Nitrogen Division serves the fertilizer industry as America's leading supplier of nitrogen for use in mixed fertilizers.

See Your County Agent

Ask your County Agent to recommend the analyses and the amounts of fertilizers best suited to produce big yields of the crops you grow on your soil. His advice to you is based on the latest official recommendations from your Extension Service and Experiment Station.

See Your Banker

Bankers are alert to good investments. They know that fertilizer pays a big return in the short period of a growing season. If you need money to buy more fertilizer, most bankers consider the extra yields produced by fertilizer as an excellent risk.

See Your Dealer

Your fertilizer dealer can supply you with a good brand of fertilizer in the amounts and analyses as recommended by your County Agent. Help your dealer to get your fertilizer to you on time by placing your order early and accepting prompt delivery. Use more fertilizer than ever before and have it on hand when you need it. Remember, fertilizer grows farm profits. Use enough to really pay you big!

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Fertilizer Grows Farm Profits

The apple kuchen which Minnie baked especially for Oscar two times a week tasted better than usual to him one evening, and he took a third cup of coffee as a way of going on a binge. Then he retired to the living room to read the paper. He felt ready indeed to read the news items and criticize the rest of the world for the sorry mess its follies led to, because the people didn't live correctly like Minnie and him.

His wife, her black hair in a knot at the back of her head, watched him nervously for a few minutes from her kitchen retreat, then came forward, her hands twisting at her apron.

"Oscar!" She stood awaiting his pleasure.

He looked up from his paper. "Yes?" he inquired as a lord would reply to a slave. "What is it?"

"N-next week is Mama's birthday again. I would like to send her a present."

Oscar frowned. "What, again? It seems only a few months ago when it was her birthday. I tell you, Minnie, we have to start cutting down on some of these expenses. Last month it was those three children of your sister in Bridgeport. Can we help it that their father ran away and your sister must work in a laundry? There is a limit to all these presents."

"But Mama has only us, Oscar, and she enjoys presents so much," said Minnie. "She looks forward to them. And when she comes to visit us that one week in summer that you let her, she scrubs floors and washes windows almost all week."

"W-well, all right," conceded Oscar grudgingly. "Buy her something then. But not too expensive. If you look around carefully, you can get some stockings, seconds. She likes stockings."

Minnie was close to tears. "Oh, seconds again, Oscar? You know how Mother likes nice good stockings. We have given her seconds for years and she knows it. It is all right to give seconds to Bertha's children, but Mama—"

"Minnie!" Oscar said firmly. "I have to talk to you like I do to Pat. It is seconds or nothing—do you hear?"

"Yes, Oscar." Hiding her disappointment Minnie went back into the kitchen and began to do the dishes.

But she had aroused a train of thought in her husband. Now he laid down the newspaper and came into the kitchen. Minnie shivered when she heard him coming. She knew from experience what was in store for her.

"Now don't tell me that you are getting careless with money like that Pat," Oscar begin critically. "I always thought you had good sense, Minnie."

"I said I would buy the seconds, Oscar. Please!"

"It was only the other day that Pat came around to me and said he thought we should have some new stationery," Oscar pointed out. "He wanted some new stuff with pictures of corn in color in one corner. The color would show the lack of nitrogen in one picture, the lack of potash in another and the lack of phosphorus in the other. And, ach, us with about 2,000 sheets of other stationery in the storeroom yet to be used."

Minnie said nothing.

"When I told Pat about that he said we could afford to junk it for scratch paper, that the new stationery would sell more fertilizer because farmers would see the colored pictures and realize that some of their corn looked like that last year. They would see why and order more fertilizer this year, Pat said. Huh, some of them took eight months to pay for what they ordered last year. Think of the stamps we spent sending them bills."

Minnie just looked at him, misery in her eyes that she had started him on this track.

"When I told Pat that he had insisted on ordering an extra 2,000 sheets of that stationery a year ago, because he said it was cheaper to order extra thousands, then he squirmed a little," continued Oscar, "but, ach, then he said a man could make mistakes, that paper didn't cost much, and—"

Minnie sniffed her tears back.

"But I told him, no, just like I told you, no," her husband said. "Somebody has got to save around the business—around this house. I save on stationery, I go around turning off lights at the store when nobody uses them, I turn down the thermostat on the heating system to 68. Tillie has lots of sweaters, and she can wear them. I watch discounts. I keep after Pat to collect before accounts get too old. And now—now I suppose I'll have to watch expenses around home, too, if I can't trust you."

"Oh, Oscar, no, no," sobbed Minnie. "Please stop. I only meant—you know I watch the pennies like you want me to. It's only that Mama—"

"I tell you I don't know what this house is going to be like when I die," Oscar said sadly. "I don't know how the business will get along without me, with everybody spending, and nobody watching the money. It will go broke in a short time, and you as a widow, Minnie—"

"Oh, no, no, Oscar, don't talk about such terrible things." Minnie threw herself against his chest and wept on his shoulder. "I'm sorry I mentioned the present. I'll buy seconds after this without even asking you. I'll do anything you say. I don't want to lose you. Don't talk about dying—yet!"

Smiling strangely Oscar patted his wife's head. Then he disengaged himself and walked back into the living room. Just before he sat down he noticed that he had been using a large bulb of the three in the bridge lamp. He turned out the big bulb, and then turned on a much weaker one. Again he smiled and sat down and resumed reading his paper.

Northwest Group to Select Oregon Site for Demonstration Project

PORTLAND, ORE. — Selection of an Oregon Farm Demonstration project to be sponsored by the Pacific Northwest Plant Food Assn. is expected soon, according to Grant Braun, chairman of the Soil Improvement Committee of the association. Mr. Braun, together with members of the committee will survey two sites, one in Washington County and the other in Yamhill County, and then will recommend a site to the board of directors of the association, who are to hold a meeting Feb. 16 at Yakima.

The Oregon project will be the third sponsored by the association. The first one was in Whatcom County, Washington, where it was carried on for three years. An Idaho Farm Project is now under way at Sandpoint, Idaho. The Oregon project will complete the demonstration projects in the Pacific Northwest.

The farm demonstration projects are designed to show the value of commercial mixed fertilizers in practical use on the farm. The association donates the fertilizer to the farmer, the Soil Improvement Committee recommends and supervises the usage and the crops to be grown on the individual farms, supplying the technical information needed by the farmer.

Thomas L. Jackson, soils department of Oregon State College, will work with the committee in making selection of the Oregon project. Mr. Jackson is a member of the Soil Improvement Committee of the association.

Englemann Spruce Beetle Campaign In Mop-up Stage

DENVER—A five year campaign against the Englemann spruce beetle, which threatened multi-million dollar damage to Colorado's western spruce forests is in the mopping-up stage, according to Joe Kay, forester who is in charge of insect control for the Rocky Mountain region.

An epidemic of the beetle was first discovered in the White River National Forest in 1941, but it was not until 1950 that the U.S. Forest Service obtained funds for a large scale control program.

Main weapon in the program was insecticides, with a total of 2,873,939 gallons used to treat 1,628,460 infected trees, at a cost of $3.25 a tree.

Mr. Kay reports that if the epidemic had been allowed to run its course an estimated 23 billion board feet of spruce would have been destroyed in Colorado alone.

Colorado's Ten Most Troublesome Insect Pests in 1955 Listed

FORT COLLINS, COLO.—The ten insect pests that caused Colorado ranchers and farmers the most trouble during the 1955 growing season have been listed by the Colorado Insect Detection Committee.

The information was compiled from weekly surveys of insect conditions carried on throughout the season by the entomology section of the Colorado A&M Experiment Station in cooperation with other groups and agencies.

Topping the list was the potato psyllid which appeared in large numbers in eastern Colorado throughout the growing season.

Codling moth caused fruit growers concern, attacking nearly all orchards with damage running from 15 to 50%.

Sugar beet root maggot developed into a major local problem in Larimer and Weld counties. Scientists found that adequate soil moisture at planting time and soil temperatures high enough for rapid germination are important in controlling this pest.

Several aphids caused losses on Colorado crops. These three did the most damage:

Pea aphid appeared in damaging numbers in eastern Colorado, particularly the Arkansas Valley, and caused farmers to turn to chemical control measures.

Spotted alfalfa aphid, an extremely serious pest of alfalfa which was found in the state for the first time in 1954, spread in 1955 to Pueblo, Otero, Crowley, Bent, Prowers, Washington, Yuma, Weld, Larimer and Mesa counties.

Corn leaf aphid showed up in all farming areas of the state and caused moderate to severe damage to barley, oats, wheat, sorghums and corn.

The corn ear worm or tomato fruit worm once again in 1955 was a major pest to both corn and tomatoes, especially in the Arkansas Valley.

Rangeland grasshoppers did some of their worst damage in northeastern Colorado area neglected in the 1954 control program. A serious problem developed also in southeastern Colorado when large numbers of Rocky Mountain grasshoppers moved in from neighboring states to damage drouth-stricken crops.

Mexican bean beetles were a serious problem in northeastern Colorado in Larimer, Weld and Adams counties and in western Colorado's Montrose, Delta and Mesa counties.

Two-spotted mites showed up in widespread areas throughout eastern and western Colorado, damaging corn crops.

Aster leafhoppers which spread a serious plant disease called aster yellows were responsible for yellows in carrots, celery, onions and potatoes in eastern Colorado.

Sugar beet leafhopper spread western yellow blight to 5 to 10% of the tomato crop in some areas and infected as high as 60% of the sugar beet crop with curly top disease.

Weeds Cost Utah $15 Million a Year

LOGAN, UTAH—Weeds are costing Utah an estimated $15 million annually or an average of about $6 per farm, an expert declared during the annual weed control short course conducted on the Utah State Agricultural College campus.

Louis Jensen, extension agronomist said the financial loss due to weeds is greater than that caused by livestock disease, plant diseases, and insects combined.

FARM SERVICE DATA

Extension Station Reports

New Mexico's 1955 cotton crop is estimated at 265,000 bales, which except for 1950, is the smallest since 1948. The estimated lint yield per harvested acre in 1955 is 694 lb., compared with 743 lb. per acre in 1954. The acreage harvested in 1955 at 183,000 is slightly down from the 204,444 acres harvested in 1954.

The lint yield per harvested acre in Arizona in 1955 dropped 90 lb. from 1954, while production was down 211,000 bales. California production was down 237,000 bales, but lint yield per acre in 1955 was about the same as in 1954. The yield per harvested acre in Texas exceeded the 1954 yield by 37 lb. and production was up 85,000 bales.

★

Using radioactive carbon dioxide as a tracer, two Oregon State college agricultural chemists have mapped out a pathway through which 2,4-D kills plants. S. C. Fang and Joseph Butts report that 2,4-D slows the transportation of sulfates and phosphates within plants. These two chemicals are essential ingredients for plant life.

The exact pattern of the slow down hasn't been discovered as yet. But it has been shown that the effect is a strangulation of the plant's ability to convert sugars and other "raw" materials into higher forms of energy and proteins necessary for plant life.

The two men also studied other physical and chemical plant functions to find if they are affected by the 2,4-D. They found that photosynthesis —the conversion of carbon dioxide and water into starch—was affected, but the uptake of nutrients from the soil was left undisturbed.

Some hint as to the form the strangulation pattern may take is revealed in research being carried on by a group headed by LeMar F. Remmert, another OSC agricultural chemist. This group has been studying the effects of 2,4-D on the complex chemical reactions that take place inside individual plant cells.

So far, they have found that at least one of the soluble enzymes (proteins that help chemical changes take place within the cell) is prevented from doing its normal job by the 2,4-D. The job now facing the scientists is to find out exactly which enzyme or enzymes are affected so methods can be worked out to control the strangulation effect more precisely and efficiently.

★

Fivefold increases in grazing capacity have been recorded on Nevada ranges, lasting three to five years after removal of sagebrush and reseeding. Brush sometimes reencroaches within a few years, but not always. A few stands have withstood the brush for as long as 15 years. More definite knowledge is needed on the cause of this difference. Nevada has about 300,000 acres of rangeland reclaimed from brush and seeded to crested wheatgrass.

★

The spotted alfalfa aphid, alias the yellow clover aphid, is sucking the profits from the pockets of alfalfa growers in New Mexico. This small parasite has siphoned over 6 million dollars from the state's farmers since it first appeared in the Pecos Valley near Artesia in the fall of 1953. John Durkin, extension entomologist at New Mexico A&M College, says the abnormally warm days over most of the state have resulted in huge build-ups of the pests and they are causing severe damage to alfalfa stands. Night temperatures, far below freezing, killed or sent other insects into hibernation, but have had no effect on the spotted alfalfa aphid.

The aphids are small and feed in colonies on the undersides of the leaves. Thus, in many cases, they go unnoticed until they have done extensive damage, Mr. Durkin states. Many growers have found that they have to check their alfalfa every two or three days by getting down on their hands and knees and closely examining a number of leaves on several plants. When they find two or three leaves out of ten covered with aphid colonies, and honeydew, they apply insecticides as quickly as the weather permits.

★

E. M. Nelson, county agent in Wasco County, Oregon, reports increasing evidence that wheat is showing response to sulphur, mainly in the highest rainfall areas where annual wheat cropping is practiced. He hasn't yet noticed sulphur response on summer-fallowed wheat land.

Mr. Nelson says that an increase of about 8 bu. of wheat per acre has been found in one case by use of sulphur, phosphorus and nitrogen as compared with nitrogen and phosphorus.

In other cases among 15 farmer trials conducted by Oregon State college and the county extension service adding sulphur and minor elements increased yields three or four bushels per acre.

"It looks as though sulphur will be the next element lacking in wheat production," he commented.

Farm Value of Main California Crops Tops $1.6 Billion in 1955

SACRAMENTO — Farm value of the principal crops grown in California in 1955 totaled $1,676,000,000, George A. Scott, chief of the California Crop and Livestock Reporting Service, reported to the State Board of Agriculture recently.

Mr. Scott said the total exceeded the corresponding value for 1954 ($1,622,027,000) by 3%, was 36% higher than the average value for the 1942-46 period ($1,228,195,000), and was the third highest on record in the state.

However, Mr. Scott continued, these gross income figures do not represent actual income to farmers, nor do they provide satisfactory measures of comparative yearly crop income, because there is evidence that farm production costs in 1955 were higher than ever before.

California leads every other state in the value of all crops grown, and has led in annual gross farm income for 21 of the past 26 years, Mr. Scott said.

Although total acreage of crops grown in 1955 was slightly less than that of the previous year, the aggregate tonnage of California's principal crops came to a record 28,228,000 tons, 3% higher than the tonnage for 1954 (27,549,000), the previous high.

While field crop production (15,640,000 tons) declined from the 1954 high (16,502,000), vegetable production was the best on record—5,440,000 tons.

Fruits and tree nuts recorded the best total tonnage (7,148,000) since the 7,644,000-ton peak in 1951.

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* * * *

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Better Selling

Richer Sales Fields for Dealers

SHOP TALK OVER THE COUNTER FOR THE DEALER

By EMMET J. HOFFMAN
Croplife Merchandising Editor

Retail sales of every type were good in 1955, yet about 5,000 firms went out of business with losses to creditors. It makes unpleasant reading but the reasons why businessmen failed during a relatively prosperous business period are intriguing.

A recent Wall Street Journal poll of businessmen who failed last year uncovered a variety of reasons why their shops were closed.

"If the people who promised to pay had paid, I'd still be in business," one dealer said. Others attributed failure to high overhead, poor location, competition from discount houses and a lack of capital. But bankers, suppliers and competitors attributed most of the failures to inexperience or poor management.

"The biggest reason for business failure is lack of experience," claims Al Potter, executive manager of the Chicago Association of Credit Men. "Nearly all failures occur in the first five years a firm is in business."

One retailer who said he could have "made it go" at his store if he had possessed sufficient capital to extend longer credit terms, was described by one of his suppliers as a completely inadequate money manager. The same supplier's official said the average unsuccessful small businessman keeps going until one day he realizes he's so far in debt "he'll never get out and that's it."

It is interesting and reassuring to note that figures compiled by Dun & Bradstreet, Inc., for all but the last few weeks of 1955 show that farm supply stores were not among those most prone to failure. The failure list was headed by food and liquor stores, eating and drinking places, apparel and accessories stores, furniture and home furnishings stores, the automotive group, and lumber, building materials and hardware firms.

The total failure list is small, of course, in relation to the vast number of retail establishments in the U.S., but it is wise to take note of some of the factors involved in those that have failed. Uncovering these factors and avoiding them are the surest way to prevent failure and successfully compete in the business world.

10c Charge for Checks

More than 500 Houston, Texas, independent food stores have invoked a 10¢ service charge for each check they cash. The volume of checks cashed in supermarkets was up an estimated 25% last year, it is claimed. Contributing factor is a change in Houston's banking laws permitting banks to close Saturdays, observers said.

Sales Builder

"Advertising will build your sales."

Managers of country elevators, conferring at Michigan State University, heard that assurance voiced by Elmer E. White, executive secretary of the Michigan Press Assn.

"Advertising is salesmanship in print," he continued in his address to management training conference for 80 elevator men and women in a two-day workshop.

Mr. White urged the elevator managers to have a planned, year-round program of advertising, and not to use ads as a stop-gap approach whenever their sales might be off.

In discussing the qualities of a good ad, Mr. White declared that such an ad must attract attention, hold interest, create desire and stimulate action.

The educational conference for elevator managers, held at Kellogg Center, was sponsored by the Michigan Bean Shippers Assn., Michigan Association of Farmer Cooperatives, Michigan Feed and Grain Association and the MSU college of agriculture short course department.

More Efficiency In Farming Needed, Texas Grower Says

BIG SPRING, TEXAS—Jimmy Eason, local truck farmer and nursery owner, stirred up plenty of comment on statements he made to a newspaper reporter. Mr. Eason said Texas farmers shouldn't complain about reduced cotton allotments, that they already had more land than some of them would farm properly.

He said the irrigation farmers could make more profit farming 100 acres than 200, and might get by with a lot less.

"In fact, a farm family can make a living on a 20-acre allotment," Mr. Eason said. "By using crop rotations, planting legumes and putting on plenty of fertilizer, he can easily make from 50 to 60 bales, which is more than some dryland farmers made this year on 200 acres."

Mr. Eason said a farm family on a small block of land should grow feed crops for livestock and chickens, raise a big garden and do all the work themselves. Also they should survey the nearest town and try to find out what kind of farm produce would sell there. It might be fryers, eggs, garden produce or plants. With a growing urban population, he said, many families were overlooking an opportunity in not developing these specialized markets.

About ten years ago Mr. Eason bought 50 acres of worthless sandy land, rented out all but 15 acres and started his nursery, orchard and truck farm. Now he sells thousands of rosebushes a year, over a million tomato plants, besides fruit, lawn grass, garden produce and other items raised on the place.

"A farmer needs to do three things to succeed," Mr. Eason said, "work hard, plan economically and wisely and go at it scientifically. Some farmers haven't put anything back into their soil in 30 years, and now every bale of cotton they produce is costing them more and more. They could farm half as many acres and make more profit. Poor management is running more people off the farm than any other thing, and until they change their farming system, a lot more of them will be moving to town looking for jobs."

What's Been Happening?

This column, a review of news reported in Croplife in recent weeks, is designed to keep retail dealers on the regional circulation plan up to date on industry happenings.

Stauffer Chemical Co. and Wilson & Geo. Meyer & Co. signed a long-term exclusive sales agreement whereby the Meyer firm will broaden its distribution in the West and Midwest to handle the increased production of new pelletized agricultural phosphates made by Stauffer.

Grace Chemical Co. said it would authorize $100 million in capital expenditures in 1956, with some 40% of this total going into chemical expansion. . . . The USDA recommended an 8% cut in total acreages devoted to summer and late potatoes; and rice growers of the U.S. approved marketing quotas for the 1956 rice crop. The referendum was held Jan. 27.

Dr. Malcolm McVickar, for many years associated with the National Fertilizer Assn. and later with the National Plant Food Institute, was appointed chief agronomist for the California Spray-Chemical Corp. The appointment was to become effective April 1, 1956.

Merger of the Wilson Chemical Sales Co., Portland, Ore. with Great Western Chemical Co., was announced. Richard H. Wilson is general manager of the new operation. . . . Dallas Cantwell, formerly agronomist with Spencer Chemical Co. joined Southern Nitrogen Co. at Savannah, Ga.

Diamond Alkali Co. announced appointments of L. J. Polite, Jr. and John W. Kennady to new positions. Mr. Polite is now product sales manager for a group of organic chemicals and Mr. Kennady is sales manager of agricultural chemicals for the company.

Two new sales representatives were appointed by Grand River Chemical Division, John Deere & Co. They were Bruce Campbell and Norman Messick. Mr. Campbell operates in Nebraska and Kansas; Mr. Messick in New Mexico, Western Texas and Eastern Arizona.

New facilities for the manufacture of granular high-analysis fertilizers were completed at Perry, Iowa, by Davison Chemical Co., Division of W. R. Grace & Co. . . . Corn borers were found infesting the stalks of cotton plants in Missouri and Tennessee. It was the first such incident to be reported.

W. F. Libby, commissioner of the U.S. Atomic Energy Commission, stated that the use of atomic energy in agriculture can save farmers as much as $210 million a year.

Agricultural groups meeting in Portland, Ore. Jan. 15-18, heard talks on systemic pesticides, insect resistance, and new methods of control. The Pacific Northwest Agricultural Chemical Industry groups in joint sessions included the Northwest Vegetable Insect Control Conference, and the Western Cooperative Spray Project.

Dr. W. B. Albert, South Carolina Agricultural Experiment Station, Clemson, S.C., was elected president of the Southern Weed Conference at the group's meeting in New Orleans, Jan. 18. He succeeded Dr. C. G. Klingman, North Carolina State College, Raleigh.

That the capacity for nitrogen production in the U.S. was greater on Jan. 1, 1956 than the goal previously set by the Office of Defense Mobilization for Jan. 1, 1957, was announced in a report by the U.S. Department of Commerce. The total capacity of 3,618,000 tons existing at the first of this year is 118,000 tons greater than the goal of 3,500,000 tons ODM had hoped for a year later.

Stauffer Chemical Co. announced having located large minable deposits of high grade phosphate rock on its patents near Bear Lake, Idaho. Reserves in the deposits were estimated at over 5,000,000 tons of commercial grade rock . . . Phillips Pacific Chemical Co. announced that it would soon begin construction on a 200-tons-a-day anhydrous ammonia plant on its recently acquired site on the Columbia River near Kennewick, Wash.

Nearly 200 persons attending the 10th annual Wisconsin Insect Control Conference at Madison were urged to "follow the labels and don't take chances on residues" when using pesticides. Speakers included prominent figures in the industry, colleges, state and federal groups. . . . Dr. E. W. Stafford, Mississippi State College entomologist, was presented with a distinguished award for 39 years of service during the second annual Mississippi Insect Control Conference at Mississippi State College. More than 250 were in attendance.

California Spray-Chemical Corp. began operations at its new liquid fertilizer plant near Modesto, Cal. Capacity of the plant is 400 tons a day of aqua ammonia and 100 tons of neutral mix fertilizers. The plant was reported to be the forerunner of a $16,000,000 expansion program on the part of Standard Oil Co. of California, of which Calspray is a subsidiary.

Both production and consumption of nitrogen on a world scale are continuing to maintain an upward trend. During 1954-55, production increased by 14% compared with the previous fiscal year, and consumption went up 13%. World inventories of the material were reported to have increased over those of last year.

International Minerals & Chemical Corp., Chicago, announced that it would double the production capacity of its Bonnie plant near Bartow, Fla., for the production of triple superphosphate and feed grade dicalcium phosphate. . . . Grover L. Bridger, Davison Chemical Corp. Division of W. R. Grace & Co., was named chairman of the Division of Fertilizer and Soil Chemistry, of the American Chemical Society.

The Ohio Pesticide Institute held its annual meeting at Wooster, with good attendance from all parts of the state and surrounding areas. . . . W. L. Popham was named director of crops regulatory programs for the Agricultural Research Service, to succeed Avery S. Hoyt, former chief of the old Bureau of Entomology and Plant Quarantine of USDA.

Martin G. Verbeet

JOINS GRAND RIVER — The appointment of Martin G. Verbeet as West Coast representative has been announced by Grand River Chemical Division of Deere & Co. Mr. Verbeet will be sales representative for the company's new high analysis urea nitrogen fertilizer, "Vitrea," and also for feed grade urea. His headquarters will be at the John Deere offices, 651 Brannan St., San Francisco, Cal. He will represent sales throughout California, Oregon and Washington.

Mid-South Farmers Take Advantage Of Heavy Rains

MEMPHIS — Heavy rains which deluged the Mid-South added more inches to the growing rainfall total in the area.

Extension officials in Arkansas, Mississippi, Missouri and Tennessee reported the rains replenished the stock ponds and aided some crops, while flooding hundreds of acres in the lowlands.

Arkansas farmers are taking better advantage of recent rains than they did a few years ago, having learned some bitter lessons from the drouths of past years.

The Soil Conservation Service said farmers in Arkansas last year showed they are becoming "increasingly aware" of the need for saving their two most valuable resources—soil and water.

Not only were more activities noted in placing soil-saving techniques into practice, but farmers were digging more stock ponds, planting more cover crops to provide a "sponge" for rainfall and making more efforts toward damming up and saving what water did fall.

C. A. Vines, associate director of the Extension Service, said the heavy rainfall has revived winter crops to a great extent, and that Arkansas' lakes and ponds have pretty well filled up.

Continued rains have just about brought all outside farming activity to a halt in Mississippi, the Agricultural Extension Service said.

Ample moisture and milder weather caused winter grazing crops and spring clovers to begin growing rapidly.

Interest is picking up in home gardening, according to K. H. Buckley, extension gardening specialist. Onion and cabbage plants and seed supplies for 1956 are being prominently displayed in stores.

West Tennessee farmers would have liked to see the recent rains that washed through the area separated a little more, according to Judd Brooks, district farm agent.

Mr. Brooks said the early dry spell warranted the amount of rainfall here, but "it didn't all have to come at one time."

FREIGHT RATES

(Continued from page 1)

lowest level of any major item entering into the cost of agricultural production."

"Farm income has declined substantially," he said. "The outlook is for additional declines during the coming year. The farmer will have less money with which to buy fertilizer. This indicates a decline in farm consumption of fertilizer even if there is no increase in the cost because of a freight rate increase.

"To impose an increase in freight rates on fertilizer under these conditions would run counter to the long-established policy of the commission to keep freight rates on fertilizers at the lowest reasonable level because of their economic value to the farmer and because their use by the farmer encourages a high production of materials for shipment by the carriers."

In asking the ICC to suspend the effective date of Ex Parte 196, "at least insofar as the proposed increases would apply to the rates on fertilizer and fertilizer materials," Mr. Truitt emphasized that "farmers are not in a position to absorb additional costs of transportation" and added that "both farmers and the fertilizer industry find themselves in the unfavorable position of facing further reduction in income at a time when virtually every other segment of the economy is booming." He said that "fertilizer is one of the most effective 'tools' that farmers have in fighting the so-called price-cost-squeeze and neither they nor the fertilizer industry can stand further freight rate increases under present economic conditions."

Soil Test Leader

JONESBORO, ARK. — About half of the 300,000 acres of tillable land in Craighead County has been soil tested—making the county a leader in soil testing in Arkansas. Donald Adams, assistant county agent, said between 140,000 and 150,000 acres have been tested at least once within the past three years under a program instituted by agricultural leaders.

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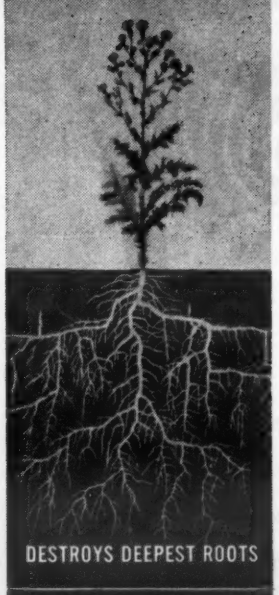

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MANUFACTURERS OF FAMOUS "20 MULE TEAM" PACKAGE PRODUCTS

WEED CONTROL IN WEST

(Continued from page 7)

proven valuable and points up the desirability of a multiple attack on weeds wherever possible.

About 20,000,000 acres of our Western crop land is irrigated. These acres provide our high value lands, most of our high value crops, and our most pressing weed problems in terms of economic importance. Weeds seem to be inherent in irrigated agriculture—weeds not only of the multitude of crops grown but of the irrigation system itself, weeds of aquatic habitat and weeds of desert habitat on the adjacent ditchbanks and unirrigated fields, riparian vegetation that uses valuable water.

Not only are conditions somewhere on the irrigated and adjacent desert lands suitable for the growth of almost every known weed species, but the water distribution provides ideal weed seed distribution as well and the method of irrigation — furrow, flood or sprinkler — may be a determining factor in what chemicals can be successfully used. The number of different crops that can be grown on irrigated land results in a wide array of cultural practices and habitats.

The intermixture of different crops in a single region may provide more opportunities for varied methods of weed control and at the same time limit the use of chemicals such as 2,4-D because of the proximity of sensitive crops. Irrigation may be an adequate substitute for rainfall in satisfying the moisture requirements of crops and weeds, but it usually does not provide satisfactory distribution of chemicals in the soil similar to that obtained from rainfall. However, where adequate moisture is available at reasonable cost, the competition for water is not so keen a factor in the economic importance of weeds.

The crops grown on these irrigated lands have an annual value in excess of two billion dollars. They include 57% of all the fruits and nuts produced in the U.S., more than 40% of all vegetables, and one sixth of the field crops.

We can only touch on the problems of a few of the major crops. One of these is cotton. Because of its importance in terms of acreage and cash return, it has received considerable attention in the last few years from both Federal and State workers. The weed problems are those common to the region — annual weeds such as pigweed, lambs quarter and annual morning glory, annual grasses such as water grass, crab grass and species of Eragrostis, Leptochloa and Setaria, perennial weeds such as nutgrass, bindweed, bermuda grass and Johnson grass.

Pre-emergence treatments have not been generally useful because of lack of rainfall at planting time and because the major weed problems develop later. Annual grasses infesting the crop after layby have been the principal problem. Earlier, the weeds are controlled by cultivation and flaming. The latter method is increasing in popularity. Later cultivation and flaming are possible with the high clearance tractors now in use. This reduces the period from layby to harvest and reduces the necessity for irrigation after layby.

There is considerable interest in layby residual treatment, however. To date the most promising chemicals are Dalapon, Alanap and CMU with the latter subject to limited recommendations because of the extended residual. Perennial grasses can be effectively controlled by spot treatment with Dalapon. Flaming has been useful on nutgrass but is not a complete answer to this pest. Perennial morning glory is a difficult problem because of the effects of 2,4-D on cotton; even spot treatments must be made with extreme care.

White Horse Nettle A Perennial Problem

Another perennial of some importance in the cotton growing area is white horse nettle. Amino triazole is currently showing promise for its control and spot treatment is less damaging to surrounding cotton. Because of the extensive and continuing work on weed control in cotton, we have perhaps more information on this crop than on any other of our major irrigated crops.

Alfalfa for hay has long been a major crop on irrigated lands, and more recently alfalfa and clover seed production has become important. Weed problems in alfalfa include dodder, annual weeds affecting establishment of stand and quality of the first cutting and perennial weeds, particularly grasses such as quack grass and bermuda grass. Control methods are being developed at most of the stations in the West.

Dodder has been discussed under dry land farming and it is even more serious on some of the irrigated fields. Annual weeds are controlled with dinitro selectives on seedling stands and general contact sprays during winter or early spring on established stands. IPC has been used for grass control in alfalfa and the clovers.

Dalapon is being investigated while alfalfa is dormant and between cuttings for control of annual grasses. Perennial grasses are usually controlled by a season of dry tillage or by spot treatment with oils or Dalapon.

Weed control practices in other field crops such as potatoes and sugar beets are not well worked out. Shielded spraying of 2,4-D for bind weed control is being practiced i beans and row alfalfa for seed. Th extension of shielded spraying t other row crops seems likely.

Irrigated pastures present serious weed problems of wide variety. The basic problem is often poor land preparation, levelling, drainage or pasture and water management. The weeds include curly dock, Polygonum species, Setaria species, sedges and many others. Where ladino clover is the principal legume, 2,4-D is being used but does not solve all the problems.

Vegetables in the West produce an income of over 400 million dollars a year. Weed problems are often acute and hand weeding is a common practice. Chemical control methods have been developed for only a few of the crops and here in this group of crops is a wide open field. Lettuce is the major vegetable crop with a value of over 100 million dollars and I know of no chemical weed control on a commercial scale. The same is true for tomatoes, both fresh market and canning.

Pesticide Treatment of Vegetables Outlined

Carrots are almost all sprayed with a light oil fraction for weed control and some of the celery is similarly treated in the plant bed or immediately after transplant. Cantaloupes had no chemical weed control prior to the limited use of Alanap which is just now becoming a commercial practice. There is interest and some commercial treatment of asparagus with CMU. Onions are treated with dinitro selectives and some potassium cyanate. A limited amount of CIPC has been used on dry onions and CMU is now registered for this use.

Fruits and nuts which together have a value of ⅔ of a billion dollars are not a major consumer of herbicides. Non-cultivation in citrus with oil sprays is common and CMU is now being used for the same purpose. Deciduous orchards may be spot treated with 2,4-D for bindweed control and there is currently an interest in the use of Dalapon for perennial grass control. The use of Dalapon in grapes for control of Johnson grass and bermuda grass is rapidly developing.

Growers of ornamentals, bedding plants, cut flowers and flower seed often have a tremendous hand weeding bill. I know of one grower who spent $800 an acre weeding stock and $400 per acre is not unusual. Soil fumigation with methyl bromide and more recently with Vapam has a place in these high value crops. Other herbicides and treatments are now receiving attention.

Perennial weeds in the irrigated areas are a continuing problem. Cheaper and safer control measures are needed. The weeds include those mentioned for the dry areas and a host of others. Nutgrass possibly deserves special attention. Cattails are always a problem as are submerged aquatics. Cattails have been controlled with 2,4-D and amino triazole is most promising.

Aromatic solvents are used in many irrigation canals but several treatments per season are required in the southern part of the region and chemicals with systemic action would be desirable. Soil sterilants are used to some extent on ditchbanks and around structures. The newer organic sterilants show promise for control of weeds below the waterline where the ditch can be drained for treatment and kept out of use for some time. Woody species include salt cedar (Tamarisk species), willow, and sometimes blackberry.

Some of our most troublesome weed problems occur on the 400 million acres of rangeland. In general, the value of these lands is

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HOECHST

...w and chemical treatments must ...e cheap if they are to be used on ... large scale. Much of the land is ... Federal ownership. The major ...roblems are (1) brush intrusion, ...2) poisonous plants, (3) weedy ...rasses of little or no value, and ...4) noxious weeds.

...Brush occurs on millions of acres ... range and reduces or eliminates ...luable grazing. The species vary ...ith locality, slope, rainfall, and ...mperature. Perhaps the most wide...read is big sagebrush (Artemisia ...identata), which has been the sub...ct of investigation by numerous ...orkers. It can be killed with either ...4-D or 2,4,5-T, the relative value ... the two varying with locality and ...eason.

...Mesquite in the Southwest is a ...ajor problem. Additional species of ...portance include several species of ...rub oak, chamise, manzanita, Ceanothus, Juniper, gorse, and scotch ...room. The most important chemicals ...o date have been 2,4-D, 2,4,5-T and ...e propionic derivatives of these two. ...ost and application problems have ...mited the area of brush treated but ...e market has a tremendous po...ential.

Poisonous plants take a heavy toll on the range each year. Control work is limited due to low land value and the often widely scattered infestations. Of the many species of poisonous plants none has received greater notoriety in the past few years than halogeton. This species is currently receiving adequate research attention.

...Klamath weed (or St. Johnswort) ...s a weed of major importance in ...daho, Washington, Oregon and Cali...rnia. It completely takes over ...therwise good rangeland. Chemical ...ontrols are successful but have been ...o more than a delaying action in ...olding down the spread. Biological ...ontrol with insects has proven suc...essful and is the first important ap...lication of this method to weeds in ...he U.S.

...The success has been the result of ...ooperative efforts by many groups ...nd it is hoped may point the way ...o biological control investigations on ...ther of our widespread weed pests. ...Additional poisonous plants of the ...ange include larkspurs, camas, loco, ...onium, milkweeds, chokecherry and ...lack greasewood. Chemical control ...f all of these has been limited.

...Several grass species of little or no ...alatability occur as weeds on range...and. They may not only occupy other...vise useful grazing land but may ...nterfere with reseeding and estab...ishment of desirable forage species. ...Satisfactory control methods for use ...n the range have not yet been de...veloped.

Noxious weeds may also occur on rangeland and here the problem of control is often complicated by low rainfall, low land values and inaccessibility to the infestations. Spot treatment of small infestations may be economically sound but larger areas often become a source of infestation for more valuable land. Concerted action by several agencies will be necessary for satisfactory financing and control programs.

...Forests occupy over 200 million ...cres of Western land. Vegetation ...ontrol problems include (1) weeds ...n forest tree nurseries, (2) control ...f ribes species which are alternate ...osts for white pine blister rust, (3) ...ontrol of brush in tree plantings, ...4) control of weed trees, and (5) ...aintain fire breaks.

...ontrol of Ribes ...arefully Organized

...The first of these is of limited ex...ent and has been investigated by ...rest Service and lumber company ...ersonnel. Control of ribes has de...loped over many years and presents ...beautiful record of work carefully organized and pursued. As new chemicals were developed they were included in the program and at present control methods are available for most species and situations, and these methods are in use in our National Forests. Work continues for cheaper, more effective controls.

The brush problems on forest land are similar to those on the range. Manzanita and ceanothus are probably the most troublesome species. Weed trees in Western forests have not received the attention given them in the East and the problem is perhaps less severe. Firebreaks made and maintained with soil sterilants have long been in use in the forests but not on extensive areas because of erosion and other problems. Chemical brush control to maintain fire trails is of increasing importance and use.

There are many problems in the West common to all regions. One of these is regulation of the use of herbicides. It has become necessary because of the wide use of these chemicals throughout a region where many different crops are grown and because of the potency of some of the newer herbicides. The problem is not to outlaw but to restrict only enough to provide safety to the user and to his neighbors. There is no panacea to the problem only a cut and fit method involving trials and change as necessary. We are faced with increasing regulation with the increase in number and use of herbicides.

Research and education in the field of weed control certainly need and deserve more support. We must remember, however, that it is a new field and support will lag behind the demands for a long time to come. It means we must be prepared to get maximum mileage from the data and information available. We don't solve weed problems, we just find an answer that serves until something better and cheaper is developed. It is a continuous process that we must fit into an ever changing agriculture.

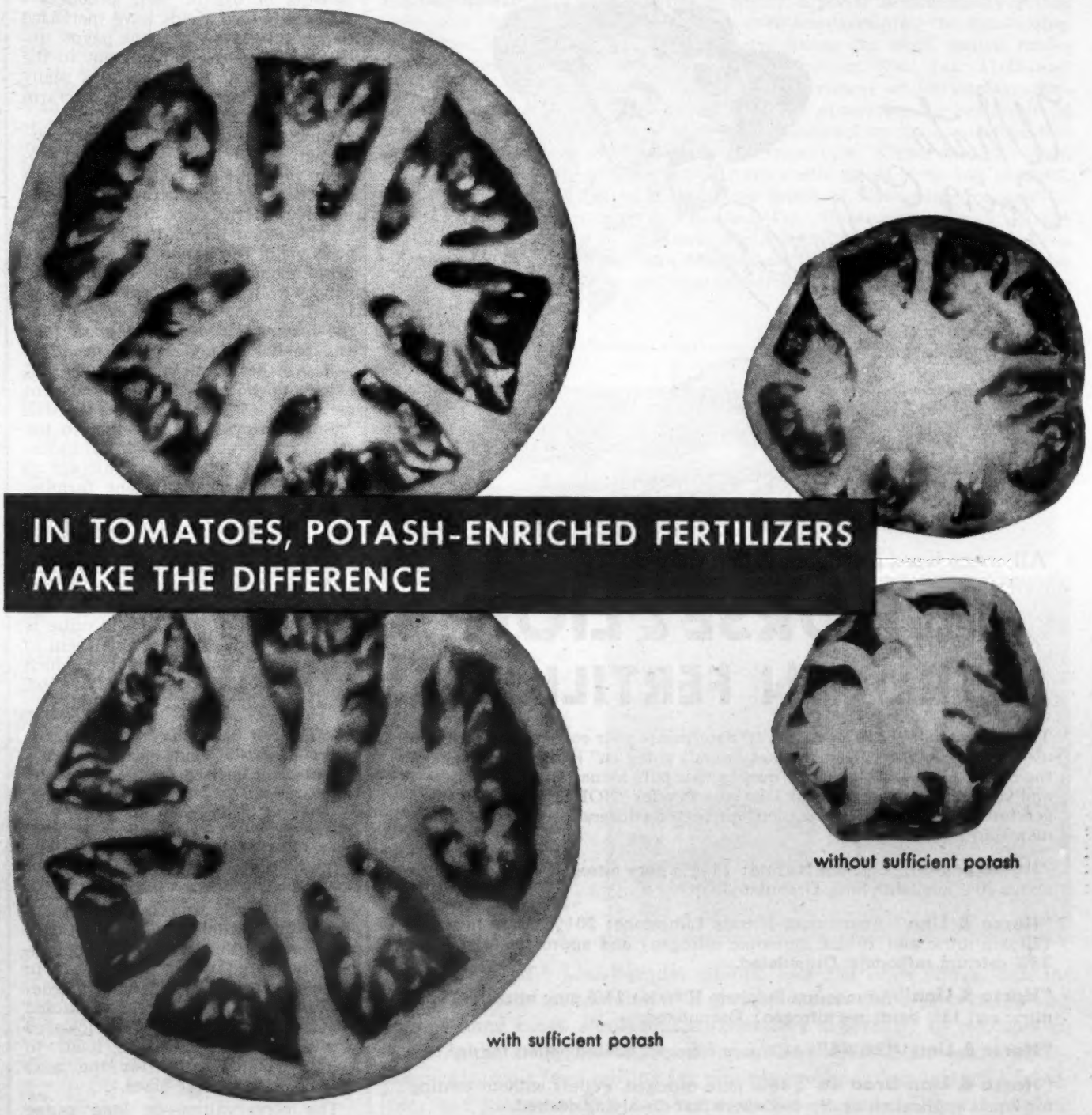
Earl W. Wagy Named Calspray Representative

RICHMOND, CAL. — Earl W. Wagy has been appointed Calspray's sales representative for Sonoma county, E. E. Gregerson, the company's Sacramento district manager, announced recently. Mr. Wagy has been with the California Spray-Chemical Corp. for six years.

For the last five years Mr. Wagy has been the corporation's representative in the Lake county area, and the company feels his experience serving Bartlett pear growers will be of great value to Sonoma county's agriculture.

AGRICULTURAL CONGRESS

GARDEN CITY, KANSAS — The annual Southwest Agricultural Congress at Garden City has been scheduled for Feb. 22-23. The program will include topics on wheat, irrigation, crops and meats.



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FARM LEGISLATION

(Continued from page 1)

known at this time. Tentative U.S. Department of Agriculture administrative plans contemplate an acreage reserve program under the soil bank of an additional 3 to 5 million acres of cotton; 12 to 15 million acres of wheat land; 4 to 6 million acres of corn and 300,000 acres of rice land.

The final decision on amount of payments by areas or crops—if the soil bank plan is approved by Congress—will be of vital importance to the plant food and pesticidal chemical industries.

If the payments are attractively high to take additional land out of production it may mean a reduction of the market potential in those crops for normal use of plant foods and pesticidal chemicals. At the present time USDA has submitted material to the Senate stating that it now contemplates a per unit allowance—pounds or bushels—of 50% of the prevailing price support level times average yields for the actual farm land taken out of production as the cash value of the certificates which would be issued under the acreage reserve program phase of the soil bank. The certificate per unit value would vary by crop areas and by crops themselves.

For example, concerning cotton, the certificate value in some counties in Mississippi would be approximately $67.50 per acre based on a normal farm yield of 450 lb. On the other hand, in South Carolina using the same basis of calculation the payment per acre would be only $45 based on a normal individual farm yield of 300 lb.

In the case of wheat, certificate values would swing between a per acre value of $17.50 in the Southwest to $13.50 in North Dakota.

Certificates issued against withdrawal of corn land are generally higher than those of the other crops mentioned. In Minnesota on a farm showing a normal yield of 70 bu. per acre the certificate value per acre would be $45.50 whereas in Iowa the certificate value for a farm with a normal yield of 58.4 bu. would be $38.54 per acre.

It is understood that the base period on which acreage yields are to be measured will be the period 1951-55. This period may be seen as a distinctively favorable one for the farmer and an indication of an unsuspected debt of gratitude to the plant food and pesticidal industries on the part of the producers.

In this short span of years these industries have been vigorously educating the farmers to the growing benefits of use of their products—years in which yields have increased importantly. Now that the payoff under the soil bank is imminent to the better yielding farms perhaps many other doubting Thomases in the farm communities may see the light.

Obviously the extent of farmer participation in the acreage reserve program phase of the soil bank must be a pocket-book consideration for each individual farm, since the checks will be calculated on an individual farm basis yield. These many decisions may bring about a re-study of sales problems within the chemical industries. It will in many instances disclose that the farmer who has used plant food and pesticides under good practices will fare better than those who declined to accept the new efficient methods.

But it provides a new tool in the sales kits of the farm chemical industry. Farmers who were reluctant to adopt the best of efficient farming practices can be shown the profit potential in the use of plant foods and pesticides.

With equal force the industry can take its case to the producers of crops whose yield potential is low and whose certificate check value is on the low side and persuade them to adopt the modern techniques which they can see graphically paying off for their neighbors.

This soil bank may turn out to be one of the biggest sales instruments ever devised for the chemical industries.

A soil bank is certain it is seen here, effective for the 1956 crops. The rigid high price support at 90% of parity is uncertain.

It is in most respects a contradiction within the bill itself. Why, it may be asked, should a 90% of parity support be voted when the farmer in these four crops is given an attractive allowance to withhold additional land from production? The lowered production is designed in itself to bring a higher price for the next crops in the market place.

The conservation—or long range side of the soil bank—follows largely along lines long advocated by good soil use economists. The Senate is proposing an authorization of an additional $350 million to persuade farmers to take out of field crop production about 25 million additional acres which would be turned back to cover crops, timber land and water conservation goals. This money would be in addition to the current annual appropriation of approximately $250 million.

A farmer in Western Kansas cooperating in this aspect of the soil bank would obtain, for instance, annual payments on a rental contract basis of five dollars per acre, based on historic productivity of the land going into the conservation reserve. In addition he would be paid 80% of the cost of making the conservation improvements and practices. Such payments on the rental phase would continue during the duration of the government rental agreement.

Another example of the conservation program—the long range program—is found in the area of the Piedmont where on a 120 acre farm the owner puts 30 acres in grass and 30 acres in trees. He would obtain a payment of $1,008 the first year which is said to represent 80% of his cost in the transitional effort. He would in addition get an annual payment of $8 per acre during the life of his rental contract with the government, or an additional $480, making a total first year payment to him of $1,488.

As for the conservation reserve program there is some doubt that it can get rolling at a full head of steam this year since there appears to be some acute shortages of desirable types of seeds for certain areas.

To insure that participation in the acreage reserve program phase of the soil bank is spread evenly, USDA told the Senate Agriculture Committee that it proposed to put maximum and minimum limitations per farm on this proposal. For example, USDA says that for wheat it would limit participation to a maximum of 30 acres or 50% of the acreage allotment of the farm, whichever is larger and a minimum of 10 acres or the total allotment whichever is smaller. In the case of a cotton farm maximum participation would be restricted to 10 acres or 50% of the allotment, whichever is larger, and a minimum of 2 acres or the allotment whichever is smaller.

Of course, this legislation could wind up in a mad political tangle due to the 90% of parity support feature. Republican Senate leaders are confident, however, that they can beat the 90% of parity support proposal on the Senate floor.

Failing that, there is the strong inference of a White House veto of any bill which would kill off the flexible price support schedules of the present law.

Such a veto would of course wipe out the soil bank — a condition which few in Congress now wish to contemplate. Both parties are behind the soil bank. This threat of a loss of the soil bank checks may act to persuade the rigid high price supporters to go along with the present flexible price support law.

The Senate bill now tentatively approved by its Agriculture Committee contains a two-price system for rice—a provision which is uncertain of final adoption. It meets State Department opposition, as it would throw a large amount of U.S. rice production in world markets at competitive prices.

A provision tentatively adopted which would fix a graduated scale of supports for crops on the basis of quality—largely aimed at wheat—is unlikely of final approval, informed sources here say. It is seen as administratively impossible of handling.

The bill also contains a provision regarding the basic grade of cotton for price support. The Senate measure would end the provision of the present law which fixes the basic grade of cotton for price support at ⅞ in. cotton. This, if approved, would mean that the basic grade price support for cotton would drop about 2.6¢ lb. and become effective for the 1956 crop.

The situation is fluid to say the least. On balance it now seems that the chemical industries may not come out too badly no matter which way the cat jumps. But by far the best conclusion would be the soil bank wherein the plant food and pesticidal chemical industry will be able to lay its efficient techniques on the line to the farm producers with the full force and effect of official documents.

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ILLINOIS SPRAY OPERATORS

(Continued from page 8)

inches) by the height of the plant (45 inches) and then multiplying the answer (.20 inch) by 100, gives you 20.

Experiments conducted by the Natural History Survey indicates that corn borers do not survive well on corn with a tassel ratio of less than 20. If a field of corn has a tassel ratio of 20 or 33 or 41, the field is very susceptible to borer attack and a large percentage of larvae hatching from egg masses will survive.

The most effective single treatment, according to Mr. Luckmann's findings, should be made after the tassel ratio reaches 20 but before the tassels are visible in the whorls of the corn plants. Field corn will begin to tassel at tassel ratio 55-65. They should be treated if there are more than 50 egg masses per 100 plants.

Surveys conducted throughout central and northern Illinois in 1955 show that only about 10 to 12% of the total corn acreage reached this critical period of growth during the time of the first generation moth flight, and most of these fields measured 45 in. or more in extended height.

Wendell Bowers, farm machinery specialist at the College of Agriculture of the University of Illinois, told the spray operators the future use of liquid fertilizers by farmers depends almost entirely on the development of inexpensive, flexible equipment or of solutions that will not corrode ordinary spray rigs.

Mr. Bowers pointed out that the same problems that existed two or three years ago with liquid nitrogen application equipment are still with us, but they have become more complex with the recent introduction of complete solutions containing N, P and K.

Aluminum, for example, is highly desirable for holding liquid nitrogen, but it is attacked by the phosphoric acid in the complete solution. This means, he said, that stainless steel is the only metal that is completely successful for handling all solutions—and that costs money.

In explaining the causes of 2,4-D injury to corn, F. W. Slife of the University of Illinois agronomy department said that most of the injury can be traced to misapplication of the material.

These are some of the precautions he urged sprayers to follow:

When ¼ lb. of acid in the ester form and ½ lb. of acid in the amine form are used on corn as a post-emergence spray, use boom drops to keep the 2,4-D off the top of the corn. Recommended rates must be used and the material applied only as directed. Spray weeds in corn when it is in the seedling stage.

The best weed control measure in soybeans still is delayed planting, Mr. Slife said. The three most effective chemicals continue to be dinitro, CIPC and Alanap. All three are recommended at six to eight pounds of acid an acre for the heavier soil types. They should not be used on the lighter types.

In a report on new control measures for quackgrass, K. P. Buchholz said that probably the most effective herbicide available today against quackgrass is dalapon.

A practical sequence suggested by Mr. Buchholz is to apply this material at the rates of eight to ten pounds an acre when the quackgrass foliage is from six to 10 in. tall in the early spring. After one to two weeks, the sod should be plowed under and the soil worked down. Control of quackgrass by this method is frequently 90%.

Treated areas may be planted to corn or some other late planted crop if proper precautions are followed, Mr. Buchholz said. Planting should be delayed four to five weeks to allow the residual to be reduced to a non-toxic level.

Because of its cost, use of maleic hydrazide has been limited to control of quackgrass in gardens and high value crops, and under favorable conditions, it can give excellent control, according to Mr. Buchholz. There is no soil residual problem, so crops can be planted immediately after soil preparation.

A third herbicide that may be used as a foliage application is amino triazole. This chemical does not produce its main effect by reducing shoot regrowth, Mr. Buchholz pointed out, but the shoots and leaves that do appear after treatment are mostly without chlorophyll. In such a condition, they cannot aid the growth of the quackgrass plant, and many of the shoots eventually die.

Earl C. Spurrier, forage crops specialist at the College of Agriculture, discounted reports that some livestock have died or become ill from eating forage that has been sprayed with weed chemicals, such as 2,4-D or 2,4,5-T or chemicals of similar make-up. Usually, he said, they suffer no ill effects from grazing on areas that have been treated with such a chemical. Post-mortems on reported cases of poisoning showed death was due to other causes. Mr. Spurrier said stock had been fed small amounts of the chemicals over long periods and never did show ill effects.

C. O. Barnard Incorrectly Quoted

C. O. Barnard, executive secretary of the Western Agricultural Chemicals Assn., was incorrectly quoted on page 20 of the Jan. 30 issue of Croplife in a report of his talk before the Northwest Agricultural Chemicals Industry Conference in Portland, Ore.

It was incorrectly stated that Mr. Barnard said that one of the aims of the agricultural chemicals industry was to offer chemical compounds "at cost, permitting profits to producers of agricultural crops and food and fibers at prices in line with current economic levels."

The phrase "at cost, permitting" should have read "at costs permitting."

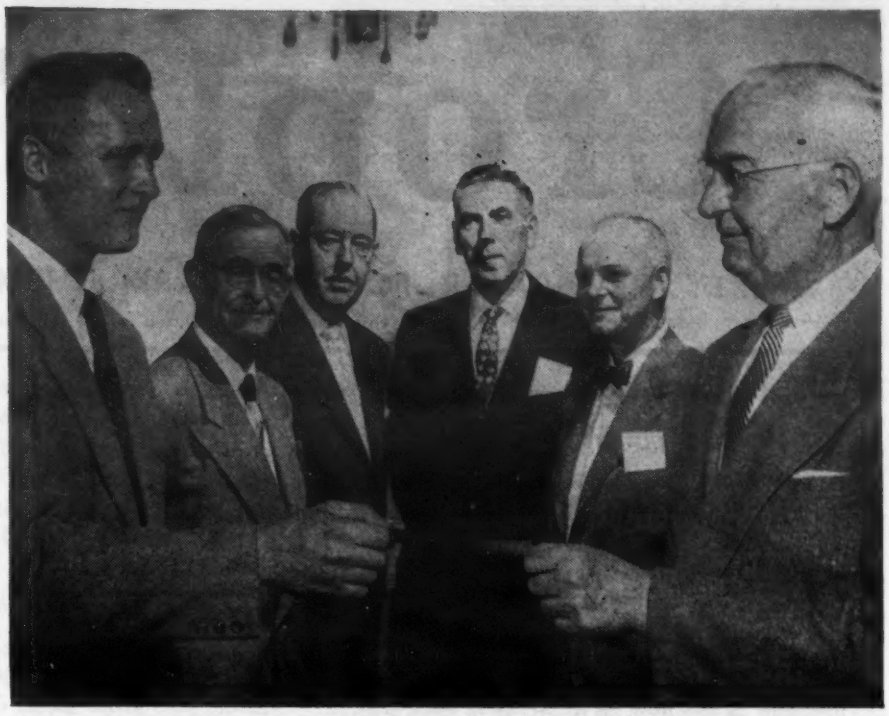
Corn Allotments

1956 Commercial Area

State	—1956 Program— No. of com'l counties	Sum of preliminary county allotments (acres)	—1955 Program— No. of com'l counties	Sum of final county allotments (acres)
Ala.	4	227,926	0	0
Ark.	3	79,970	0	0
Del.	3	130,282	3	151,138
*Ill.	102	7,008,873	101	8,172,895
*Ind. ...	90	3,576,766	89	4,160,233
Iowa ...	99	8,201,379	99	9,636,620
*Kansas..	23	1,076,860	22	1,274,559
*Ky.	49	1,032,806	43	1,145,429
*Md. ...	13	271,640	14	333,647
*Mich. ..	35	1,179,378	29	1,175,522
Minn. ...	58	4,058,157	58	4,738,582
*Mo. ...	71	2,814,884	69	3,281,548
Neb. ...	61	4,965,412	61	5,923,994
*N. J. ..	8	100,820	7	99,366
*N. C. ..	27	858,604	23	890,177
N. D. ...	1	84,725	1	96,478
Ohio ...	68	2,534,035	68	2,960,633
*Pa.	29	693,062	30	811,954
S. D. ...	32	2,319,492	32	2,726,309
*Tenn. ..	16	414,680	9	339,370
*Va.	10	147,059	9	171,886
W. Va. .	2	18,901	2	21,935
Wis. ...	36	1,484,832	36	1,730,422
Total .	840	43,280,543	805	49,842,697

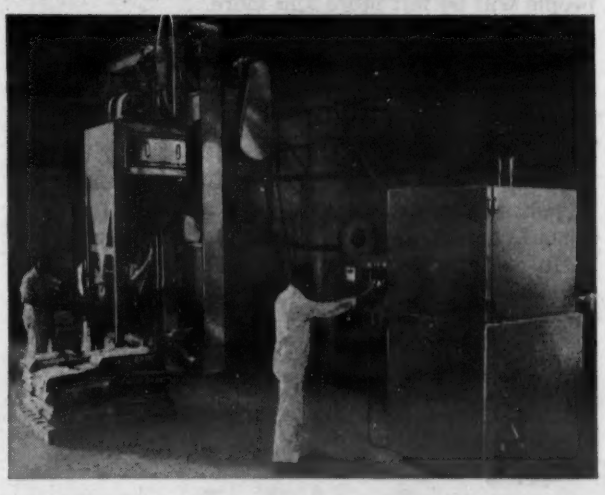
*Acreages for 1955 and 1956 not comparable because of change in area.

CORN ALLOTMENTS — The U.S. Department of Agriculture recently announced an allotment of 43,280,543 acres for the 1956 corn crop in the 840-county commercial corn-producing area in 23 states. This is about 15% smaller than the 1955 allotment of 49,842,697 acres in 805 counties in 21 states. The table above shows the state allotments for 1956. A story of the allotments appeared on page 1 of the Feb. 6 Croplife.



SCHOLARSHIP WINNER—Walter S. Bigley, a junior in entomology at the University of Wisconsin, was awarded a $150 scholarship by the Scholarship Committee of the Insect Control Industries during the tenth annual Insect Control Conference with Industry held in Madison, Wis., Jan. 11-12 and sponsored by the University of Wisconsin Department of Entomology. Mr. Bigley was chosen to receive the award on a basis of meeting the qualifications of high standards and all-around ability as established by the committee. Mr. Bigley is shown above receiving the check from V. E. Kivlin, associate dean of the Wisconsin College of Agriculture. The entire group, from left to right, are: Mr. Bigley; Prof. C. L. Fluke, Department of Entomology; James D. Hopkins, Hopkins Agricultural Chemical Co., Madison, chairman of the Scholarship Committee; H. H. Harris, McConnon Co., Winona, Minn.; Alfred Weed, John Powell Division, Olin Mathieson Chemical Corp., Baltimore, and Mr. Kivlin. A story of the conference appeared on page 1 of the Jan. 23 issue of Croplife.

Poulsen Insecticide Plants Increase Production for Oasis Chemical Co., Inc.



A recently installed Poulsen R.T.R.* Uni-Blender insecticide compounding plant, at left, is producing Oasis Brand insecticides in Imperial, California. It is a dual unit with 40 cubic feet capacity; three to four batches per hour. At right is a Poulsen R.T.R. Uni-Blender liquid formulating system.

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A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL INDUSTRY

The regional circulation of this issue is concentrated in the Western states.

Good Dealer Organization An Asset to Manufacturer

A resolution urging fertilizer manufacturers "to cease by-passing of established grain and feed dealers by the establishment of farmer and itinerant trucker agents" was passed recently by the 54th annual convention of the Indiana Grain & Feed Dealers Assn. at Indianapolis.

It has been our observation that this problem is not now as acute as it once was, since there is an abundance of evidence in the trade today that fertilizer manufacturers are developing and strengthening their dealer outlets. Still, the idea that manufacturers of any commodity should not compete in the field with their own dealers, is a basic one for any industry.

The trend now is toward a stronger dealer organization for fertilizer sales and service on a local level and a great deal of educational material is being directed to dealers in all sections of the country. Once the dealers understand the problems involved and know the answers to why it pays farmers to use greater amounts of plant food, the dealer will be in a better position to realize more volume and profit from fertilizer sales.

With dealers everywhere becoming more aware of the potentialities of fertilizer sales, plus improved distribution patterns, we think that the problem of manufacturers by-passing their dealers will eventually solve itself. Until that time, however, the industry will continue to reduce the number of instances where this happens, and the results of educational efforts for dealers and sales people will be felt more and more.

Farmers Find It Costly To Skimp on Fertilizer

With the fertilizer selling season getting under way in some parts of the country and the remainder polishing and oiling its sales weapons for the annual campaign, a few selling reminders seem to be in order, even at the risk of emphasizing the obvious.

The sales efforts of the entire industry must be stepped up this year because of expected resistance on the part of growers. New angles must be pursued and the old line arguments beefed up to prevent a possible slippage in sales.

A number of good sales points was made recently by W. R. Thompson, extension agronomist at Mississippi State College, a man of considerable note in the fertilizer trade because of his outspoken statements in favor of grassland farming and his having appeared on various programs at trade conventions.

Mr. Thompson points out that farmers grow three kinds of crops, as a rule: row crops, which are sold for cash in the fall; row crops produced for feed and forage; and pasture crops on which livestock may graze.

When it comes to purchasing fertilizer for his annual needs, the farmer may say he can afford to put more fertilizer on the cash row crops, but not on the feed or pasture crops which will not be sold for cash. "I think this philosophy is wrong," Mr. Thompson says.

On the contrary, he declares that we should fertilize our forage and feed crops, because eventually they will be sold or used as feed which will save money or make money, and this is the same as selling a cash crop.

In talking to farmers, Mr. Thompson tells them, "Suppose we figure that all of a corn crop is for farm use and none of it for sale, and you will figure you cannot afford to fertilize it because it is not for sale. The average production of corn on average hill soil in Mississippi without fertilizer was 30 bu. an acre in 1955, our highest average yield.

"It is fairly easy to go to 50 bu. an acre," he continues, "but you can figure that a big part of that 50 bushels is from fertilizer applied each year. It will cost you about 500 lb. of a good mixed fertilizer, plus from 40 to 60 lb. nitrogen, according to how good your soil is, to get the extra 30 to 35 bu. you get from fertilizer.

"Don't plan your corn crop and figure you cannot afford to use fertilizer just because you are not going to sell the corn. Figure instead, that you cannot afford NOT to fertilize, because of the labor and seed required to grow corn at a low production per acre without fertilizer," he added.

That's good selling talk . . . because it makes the kind of sense a farmer can easily comprehend. Dealers could well adapt this "pitch" to their own communities and increase sales.

Fertilizer sales people in the cotton states could also get some good sales ammunition from Mr. Thompson's thinking. He quotes T. M. Waller, extension cotton specialist for Mississippi, who says that the average per acre cotton production without fertilizer, would be not over 200 to 210 lb. lint per acre.

"I don't believe you would be willing to farm land for this low cotton production per acre," Mr. Thompson tells his farmer constituents, then adds, "You are always willing to fertilize your cotton. There is a reason for this, as you know you can sell this crop in October or November.

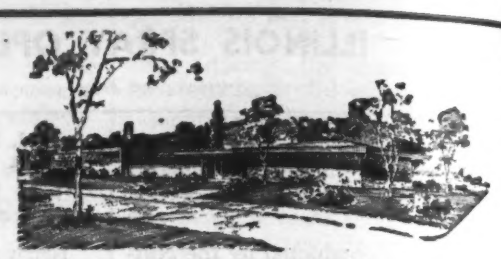
"The average fertilizer recommendation for the hill area is 72 lb. nitrogen, 48 lb. phosphorus and 48 lb. potash for one bale per acre production. I don't believe I could talk you out of using this fertilizer. You would immediately tell me you couldn't afford to farm with the cotton production you would get without fertilizer.

"Often we figure we don't sell the grass or feed immediately so we gamble on taking the average production from the land. This is a serious mistake. Sit down now and plan on this year's production of cotton or other cash row crops, row crops of feed or forage to be kept at home and pasture crops and plan to fertilize all of them. Don't plan to go way up high per acre on any crop. Use the average fertilizer recommendation for all the crops.

"If you borrow money to make this year's crops, you can borrow so little for fertilizer needs that you won't make enough to pay the loan back. I don't think you will have any argument with any lending agency when you want to raise your fertilizer rate up to that recommended by the experiment station."

So here's a free sales talk, adaptable to many situations. It is of particular significance, we think, to note Mr. Thompson's emphasis on borrowing enough money to put on a full fertilization program in keeping with state agricultural experiment station recommendations. Short of this, yields and profits are not optimum, and thus neither the farmer nor his banker is as happy over the transaction as he could be.

It is not easy to talk farmers into buying more in the face of their present difficulties, but some of the above points should make good sense to the farmer-businessman. It is certainly worth adding this information to the stores already in the sales arsenal.



Croplife

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MEETING MEMOS

Feb. 13—Arkansas Anhydrous Ammonia Dealers Assn., Lafayette Hotel, Little Rock; G. E. Davis, Lepanto, Ark., secretary-treasurer.

Feb. 14-16 — Agricultural Chemicals Conference, Lubbock, Texas.

Feb. 15-16—Oklahoma Plant Food Educational Society, Oklahoma A&M College, Stillwater, Okla.

Feb. 15-17—California Weed Control Conference, Sacramento and Davis, Cal.; Oliver A. Leonard, Botany Dept., University of California, Davis, Cal., secretary.

Feb. 15-17 — Western Weed Control Conference, Sacramento and Davis, Cal.; W. C. Robacker, U.S. Department of Agriculture, Nevada Agricultural Experiment Station, Reno, Nev., secretary-treasurer.

Feb. 16-17 — Middle West Soil Improvement Committee's annual joint meeting of the fertilizer industry and Universities; Edgewater Beach Hotel, Chicago.

Feb. 20-21 — Southwestern Branch, Entomological Society of America, Hotel Texas, Fort Worth, Texas.

Feb. 22-24—Fifth Annual Ohio-Indiana Agricultural Aviation Conference, Ohio Union, Ohio State University, Columbus.

Feb. 22-24—Alabama Pest Control Conference; Alabama Polytechnic Institute, Auburn, Ala.

Feb. 22-24—Midwestern Chapter, National Shade Tree Conference; LaSalle Hotel, Chicago; Noel B. Wysong, Cook County Forest Preserve, River Forest, Ill., secretary.

Feb. 28-29—Fifth Annual Pesticide Chemicals School, Clemson House, Clemson, S.C., Dr. J. H. Cochran, Dept. of Entomology and Zoology, Clemson College, Clemson, S.C.

March 6-7—Fifth Annual Western Cotton Production Conference, Fresno Hacienda, Fresno, Cal.

March 14-18 — National Agricultural Chemicals Assn., Spring Meeting; Hollywood Beach Hotel, Hollywood, Fla.; Lea S. Hitchner, NAC executive secretary, 1145 19th St. N.W., Washington 6, D.C.

March 28-30—North Central States Branch, Entomological Society of America, Purdue University Memorial Union, Lafayette, Ind.

April 10-12—Council for Agricultural and Chemurgic Research, 21st Annual Conference; Congress Hotel, Chicago; Sec., John W. Ticknor, Council for Agricultural and Chemurgic Research, 350 Fifth Ave., New York 1, N.Y.

April 16-17—Fourth Annual California Fertilizer Conference, Citrus Experiment Station, University of California, Riverside. Sidney H. Bierly, secretary, 457 Huntington Drive, San Marino 9, Cal.

May 16-18—Synthetic Organic Chemical Manufacturers Assn., Annual Outing, Skytop, Pa.

May 20-22—42nd Mid-year Meeting, Chemical Specialties Manufacturers Assn., Drake Hotel, Chicago; H. W. Hamilton, secretary, 50 E. 41st St., New York 17.

June 10-13—National Plant Food Institute, Annual Convention, the Greenbrier, White Sulphur Springs, W. Va.

June 28-30—Association of Southern Feed & Fertilizer Control Officials, 14th Annual Convention, Hotel Roanoke, Roanoke, Va.; Bruce Poundstone, Kentucky Agricultural Experiment Station, Lexington, Ky., Secretary-Treasurer.

June 28-30—Seventh Regional Fertilizer Conference of the Pacific Northwest, Chinook Hotel, Yakima, Wash.

July 12—South Carolina Fertilizer Meeting, Tour of Edisto Experiment Station, Blackville, S.C.

July 19-20—Southwestern Fertilizer Conference and Grade Hearing, Buccaneer Hotel, Galveston, Texas.

July 25-27—Northwest Association of Horticulturists, Entomologists and Plant Pathologists Conference, Northwest Washington Experiment Station, Mount Vernon, Wash.

Aug. 17-25—Tenth International Congress of Entomology, McGill University and University of Montreal, Montreal, Canada, J. A. Downes, Science Service Bldg., Carling Ave., Ottawa, Ontario, Canada, Congress Secretary.

Nov. 19-20 — Eastern Branch, Entomological Society of America, Hotel Haddon Hall, Atlantic City, N.J., B. F. Driggers, Rutgers University, New Brunswick, N.J., Secretary.

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Agricultural Chemicals Division, Pittsburgh Coke & Chemical Co.....
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Allied Chemical & Dye Corp., General Chemical Division .....
Allied Chemical & Dye Corp., Nitrogen Division 12, 13
American Potash & Chemical Corp.....
Anco Manufacturing & Supply Co. .....
Armour Fertilizer Works .....
Ashcraft-Wilkinson Co. .....
Atkins, Kroll & Co. 20

Bagpak Div., International Paper Co. ....
Baker, H. J., & Bro. .....
Baughman Manufacturing Co., Inc. 4
Beaird, J. B., Co. .....
Bemis Bro. Bag Co. .....
Blue, John, Co. .....
Bradley & Baker 3
Burkhardt-Larsen Co. .....
Burrows Equipment Co. .....
Butler Manufacturing Co. .....

Calcium Carbonate Co. .....
California Spray-Chemical Corp. .....
Carlile, J. C., & Associates .....
Chase Bag Co. .....
Chemical Service Corp. .....
Chipman Chemical Co. .....
Clover Chemical Co. .....
College Science Publ. .....
Commercial Solvents Corp. .....

Davison Chemical Co. 5
Deere & Co., Grand River Chem. Div.....
Dempster Mfg. Co. .....
Diamond Alkali Co. .....
Diamond Black Leaf Co. .....
Doane Agricultural Service .....
Donco, Inc. .....
Douglas Chemical Co. .....
E. I. du Pont de Nemours & Co., Inc.....

Eastern States Chem. Co. 2
Export Chemical Corp. of Colorado .....

Fairfield Chemical Division, Food Machinery and Chemical Corp. .....
Fischbein, Dave, Co. .....
Flint Steel Corporation .....
Floridin Company .....
Frontier Chemical Co. .....

Gandrud, E. S., Co. .....
General Chemical Division, Allied Chemical & Dye Corp. .....
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Grand River Chemical Div., Deere & Co...

Hahn, Inc. .....
Hammond Bag & Paper Co. .....
Henderson Mfg. Co. .....
Hercules Powder Co. .....
Highway Equipment Co. .....
Hough, Frank H., Co. .....
Hypro Engineering, Inc. .....

International Minerals & Chemical Corp...
International Paper Co., Bagpak Div. ....

Johns-Manville Corp. .....

K. B. H. Corporation, The .....
Ketona Chemical Corp. .....
Kolker Chemical Corp. .....

Krause Plow Corp. .....
Kraft Bag Corp. 8

Larvacide Products, Inc. .....
Lebanon Chemical Corp. .....
Lion Oil Co., Div. Monsanto Chem. Co....

The Mackwin Co. .....
Meredith Publishing Co. 6
Wilson & George Meyer & Co. .....
Michigan Chemical Corp. .....
Midstate Machinery Co. .....
Midwestern Spray-Chemical Co., Inc.....
Minco Products Corp. .....
Minerals & Chemical Corp. of America...
Mississippi River Chemical Co. 3
Monsanto Chemical Co. .....

Naugatuck Chemical Div., U. S. Rubber Co. .....
Nelson, Edward S., Ltd. .....
New York Hanseatic Corp. 18
Niagara Chemical Division, Food Machinery and Chemical Corp. .....
Nitrogen Div., Allied Chemical & Dye Corporation 12, 13
Northern Chemical Industries .....

Olin Mathieson Chemical Corp., ... 15

Pacific Coast Borax Co. 17
Pacific Plastics Co. .....
Pennsylvania Salt Mfg. Co. of Washington
Pfizer, Chas., & Co., Inc.....
Phelps-Dodge Refining Corp. .....
Phillips Chemical Co. 11
Pittsburgh Coke & Chemicals Co., Agricultural Chemicals Division .....
Potash Company of America .....
Poulsen Company 21
Powell, John, & Co., Inc.....
Private Brands, Inc. .....

Rapids Machinery Co. .....
Residex Corp. .....
Rieke Metal Products Corp. .....
Riverdale Chemical Co. .....

Savage, K. E., Co. .....
Schrock Fertilizer Service .....
Shell Chemical Corp. .....
Smith-Rowland Co., Inc. .....
Sohio Chemical Co. .....
Specifide, Inc. .....
Spencer Chemical Co. .....
Stauffer Chemical Co. .....
Stewart-Warner Corp. .....
Stoker, H. S., Co. .....
Successful Farming 6

Tennessee Corp. 7
Thompson-Hayward Chemical Co. .....

Umbaugh Agricultural Chemical Co.....
Union Bag and Paper Corp.....
United Petroleum Gas Co. .....
U. S. Phosphoric Products Division, Tennessee Corp. 7
U. S. Potash Co. 19
U. S. Rubber Co., Naugatuck Chem. Div..
U. S. Steel Corp. .....

Velsicol Corporation .....
Virginia-Carolina Chemical Corp. .....
Vulcan Containers, Inc. .....
Vulcan Steel Container Co. .....

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- Formulators of Pesticides, Herbicides and other Farm Chemicals
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- Farm Advisor Group—county agents, agriculture department officials, extension and experiment station personnel, soil conservation men, bankers and consultants

Croplife, with a publishing schedule every 168 hours, is reporting news to the industry while it's still news! A staff of 21 crack newsmen in key U.S. cities and backed by 100 special correspondents provides the stop-press coverage of the industry required by readers who make the command decisions.

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